SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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No. 2191.—VOL. XLVII. LONDON, SATURDAY, AUGUST 18, 1877. PRICE (WITH THE JOURNAL) SIXPENCE. PER ANNUM, BY POST, £1 4s.

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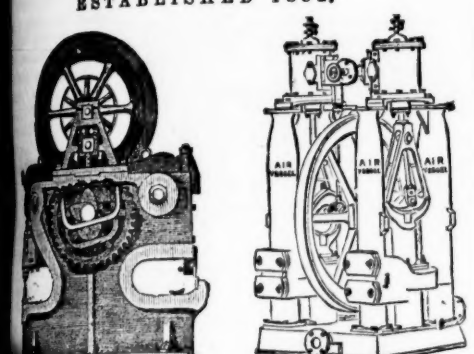

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PARIS, BRONZE MEDAL, 1867.

ORDER OF THE CROWN OF PRUSSIA.

FALMOUTH, SILVER MEDAL, 1867

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having exhibited the McKean Drill alone as the MODEL BORING MACHINE for the ST. GOTHARD TUNNEL.

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At the south end of the St. Gothard Tunnel, where

THE McKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecutive weeks, ending February 7, was 24·90, 27·60, 24·80, 26·10, 28·30, 27·10, 28·40, 28·70 metres. Total advance of south heading during January was **121·30 metres, or 133 yards.**

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere (7½ lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

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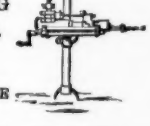

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Mr. BAINBRIDGE, C.E., of the London Company's Mines, Middleton-in-Teesdale, by Darlington, writing on the 20th March, 1876, says—"The yearly profit on our Nanthead waste heaps amounted last year to £600, besides the machinery being occupied for some months in dressing ore-stuff from the mines. Of course, if it had been wholly engaged in dressing wastes our returns would have been greater; but it is giving us every satisfaction, and bringing the waste heaps into profitable use, which would otherwise remain dormant."

Mr. T. B. STEWART, Manager of the Duke of Buccleuch's Mines, Wanlockhead, Abington, N.B., writing on 20th March, 1876, says—"I have much pleasure in stating that a full and superior set of your Ore Dressing Machinery has been at work at these mines for fully a month, and each day as the moving parts become smoother, and those in charge understand the working of the machinery better, it gives increasing satisfaction, the ore being dressed more quickly, cheaply, and satisfactorily than by any other method."

Mr. BAINBRIDGE, speaking of machinery supplied Colberry Mines, says—"Your machinery saves fully one-half on old wages, and vastly more on the wages we have now to pay. Over and above the saving in cost is the saving in ore, which is a lot much short of 10 per cent."

GREENSIDE MINE COMPANY, Patterdale, near Penrith, say—"The separation which they make is complete."

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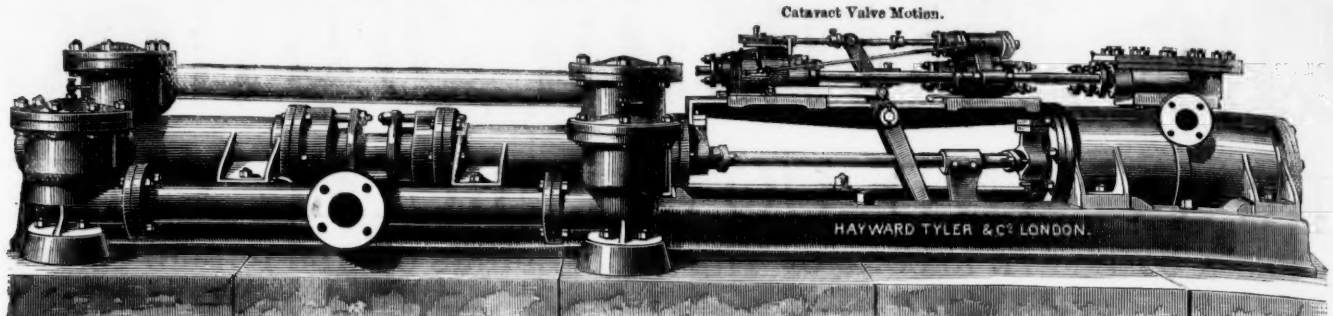

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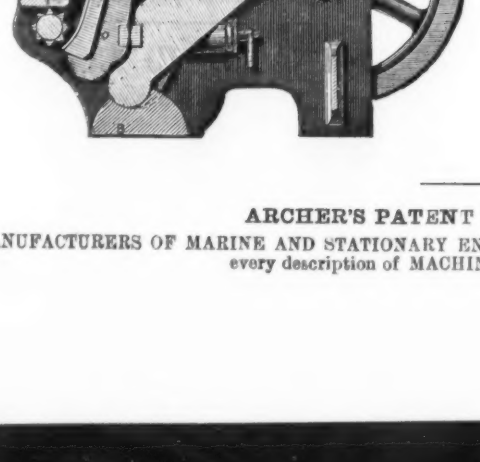

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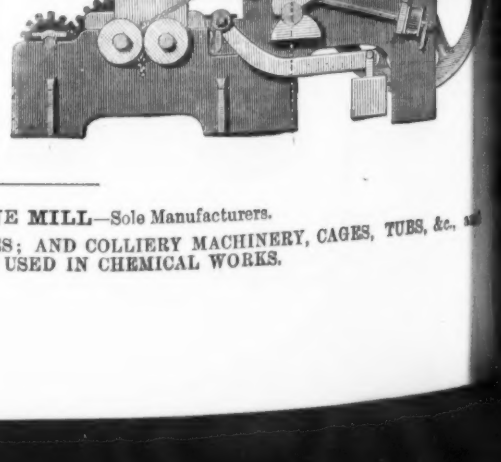

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MANUFACTURERS OF MARINE AND STATIONARY ENGINES; AND COLLIERY MACHINERY, CAGES, TUBS, &c., and every description of MACHINERY USED IN CHEMICAL WORKS.

Original Correspondence.

COLLIERIES IN YORKSHIRE—THE HOYLAND SILKSTONE.

THE FINEST SHAFT IN ENGLAND.

For several years the question was discussed by the mining engineers of South Yorkshire as to the probable thickness and quality of the well-known Silkstone seam of coal would be found when sunk from the Barnsley bed, the distance between the two being sometimes like 380 yards, and whether it would be compact or adulterated with other material to an extent that it could not be worked so as to realise a profit. So great was the scepticism on the subject that in no part of the Midland field where the Silkstone coal was known to be in conjunction with the Barnsley bed—for where the latter is the other is sure to underlie it—was the solution of this important and expensive problem attempted until rather less than three years ago. At that time the Barnsley seam at the Hoyland colliery having been exhausted, it was determined, through the spirited enterprise of the Chairman, Mr. Wells, a well-known Yorkshire shipowner and timber merchant of Hull, of which town he was the mayor, and Mr. Birch and Mr. Ryde, both of Manchester, and one or two others, to risk a very heavy amount of capital in proving what was the actual condition of the Silkstone coal, which was known to be at least 500 yards from the surface. They agreed to sink what is now admitted to be the finest known shaft in England, or, indeed, in the kingdom, being no less than 20 ft. clear in diameter inside, and 510 yards deep. There is another shaft of the same diameter, it is true, but it is only about half the depth. The whole of the arrangements were entrusted to Mr. John Higson, the well-known mining engineer, of Manchester, who was ably seconded by Mr. W. H. Pocock, the resident viewer, who was one of the originators of the scheme. The work once commenced was energetically pushed forward, so that on Jan. 7, 1876, one year and 10 months from starting, the coal was reached at the depth, as before stated, of 510 yards—a rapidity in sinking of which there are very few similar instances on record. Before the work was commenced fears were entertained that the coal would thin out to the dips, but exactly the opposite turned out to be the case. It was expected by many of those connected with the Silkstone collieries that the seam at Hoyland would not be so thick as that at pits where the coal was much nearer to the surface; but this also proved to be incorrect, for it was found to be of the rather unusual thickness of 5 ft. 8 in.—at most places ranging from 4 to 5 ft.—and considerably richer and cleaner than that worked on the outcrop. The quality, indeed, was all that could be desired, deep glossy, with cubical fracture, entirely free from shale or any other impurity, and if equalled it certainly cannot be excelled by any Silkstone coal yet met with, being alike adapted for house, steam, or gas purposes. Thus, through the energy and capital of a few gentlemen a most important problem has been solved, so that we are now assured of an area of fine coal existing below what is known in South Yorkshire as the Barnsley bed, and in Derbyshire and Notts as the Top-hard seam, some hundreds of square miles in extent, that will for many generations to come be capable of supplying the wants of a vast community, for it may be said that the Midland coal field, which extends from Nottingham to the northern part of the West Riding, is the largest in England, the unworked coal left in it at a depth not exceeding 4000 yds. being nearly twice as much as that in Durham and Northumberland.

The colliery covers a considerable area of ground, and is situate at the entrance to the village of Hoyland, four miles from Barnsley. There are three drawing shafts—to the Thorncliffe, Flockton, and Silkstone seams, all of which are being worked. There is a cupola on the Flockton pit, whilst the Thorncliffe shaft goes down to the Silkstone coal, from which the latter can also be drawn. The Thorncliffe pit will act as the up-cast. The head-gearing of that pit is of stout pitch pine on massive pillars, the height being about 70 feet from the surface. The pulleys are 18 feet in diameter, with round steel wire-rope 435 yards in length. As to the Flockton pit, it is brought to the surface from the Thorncliffe pit, the haulage at the bottom being done by an endless wire-rope, which is well adapted for working on a tolerably level road without that amount of wear and tear it would be subject to were the ground uneven. Very attention has evidently been paid to making the Silkstone as perfect in every possible way, for nothing has been left undone that could suggest itself to the most experienced and scientific mining engineer. As before stated, the shaft is 20 feet clear inside diameter, being bricked from the top to the bottom. It is situate about 70 yards from the Thorncliffe shaft, and is covered in with corrugated iron. The head-gearing from the surface to the top is about 90 feet high, and is of massive pitch pine, standing on substantial supports. The cages are single-decked, but bring up four tubs, or 2 tons, of coal at each draw. The coal is wound up by two flat wire winding ropes, the length of each being 620 yards, and 4½ inches in width, and of singularly uniform construction. Many of our engineers have been prejudiced against the use of flat wire winding ropes, but the experience gained at Hoyland as to their durability has been most satisfactory, for we were informed that the ropes now working had been in use nearly four years. The round wire ropes at the up-cast shaft it may be said were made specially for sinking. They are truly non-twisting in a depth of over 500 yards, not even a turn being perceptible on the whole length, thus showing the advantage derived by using such a class of ropes for sinking colliery shafts without the use of guide ropes. All the ropes were made by the well-known firm of Scott Brothers, of Manchester. To prevent overwinding Ormerod's patent safety hook is in operation at each pit. On the different pit hills there are a considerable number of screens through which all the coal passes over, so as to ensure its being sent away in a marketable state into the wagons below, and such is the demand for it even in the present state of the coal trade that on the occasion of our visit there was no stock whatever to be seen on any of the pit hills.

The engine rooms are large and airy, whilst the machinery and appliances generally are on a scale commensurate with the extensive character of the colliery. In connection with the Silkstone Pit there are a pair of engines of 200-horse power (by W. and J. Garforth, Duckinfield), with 36 in. cylinders, 6 ft. stroke, the drum being 18 ft. 6 in., and the break wheel 22 ft. in diameter. There are eight boilers, 35 ft. long and 6 ft. 6 in. in diameter, four being by the Messrs. Garforth and Co., Duckinfield, and Clayton, of Preston, on the multitubular, and another a Galloway tubular. At the Thorncliffe Pit there are a pair of horizontal engines, each of 40 horse power, by J. D. Leigh, of Patricroft, being 25 in. cylinders, 4 ft. stroke, the drum being 13 ft. The engines are driven by the boilers connected with the Silkstone Pit.

At the present time the ventilation of the Silkstone Pit is effected by means of a small Schiele fan about 5 ft. in diameter, but this is only a temporary arrangement, for a far more powerful one is now being constructed on the same principle by the Union Engineering Company, of Manchester, of which Mr. J. H. Penman is the able chief. It will have a revolving disc of wrought-iron, 15 ft. in diameter, and we believe about 28 in. in the wing, capable of producing upwards of 250,000 cubic feet of air per minute, with about 200 revolutions in the same period. The fan drift is now in course of construction, and will be 13 ft. wide and 21 ft. high. Although the fan is a very powerful one it does not occupy as much space as might be expected, economy in space being one of the advantages claimed for the Schiele, several of which are now at work in the same locality. The Flockton Pit is ventilated by means of a furnace, the shaft being 12 ft. in length and 6 ft. in width, but the fan in all probability will ultimately be introduced. Horses are now used in the bottom for drawing the coal from the working places to the bottom, but it is intended to have all that work done by means of compressed air, now considered the best and most economical system for underground haulage in collieries, and is being extensively adopted.

In sinking down to the lower or Silkstone coal several other seams were passed through in addition to those that are being worked. The principal seams are—

Swallow Wood coal	3 ft.	0	in. thick.
Gun coal, about	2	0	,,
Parkgate coal	4	0	,,
Flockton coal	2	3	,,
Thorncliffe coal	3	6	,,
Silkstone coal, from	5 ft. 6 in.	to 5	8 ,,

The Parkgate coal is worked at several places, where it varies in thickness from 4 to 5 ft., but, as a rule, it is inferior to several other beds. Of all the inland coal, however, the Silkstone coal is undoubtedly the best, some of it being fully equal to Wallsend, whilst in particular it commands the highest price in the London market, where it is a great favourite. At Hoyland the seam is particularly good, and the analysis by Mr. Baynes, public analyst, as to its production of gas shows this most conclusively. The chemical composition is—

Carbon	80·46	Moisture	1·03
Hydrogen	5·09	Ash	3·30
Oxygen (and loss)	6·79		
Nitrogen	1·67	Total	100·00
Sulphur	1·66	Specific gravity	1·261

With respect to the ILLUMINATING POWER, it was found that taking a number of candles (each burning 120 grains of sperm per hour) required to yield an amount of light equal to a burner consuming 5 cubic feet of gas per hour, corrected to a temperature of 60° F., and a barometric pressure of 30 in., the—

Average of three experiments was	17·10
Number of cubic feet of this powerful gas yielded by 1 ton of coal	11 650
Weight of illuminating matter per ton of coals in pounds of sperm	683·02
Volatile matter per cent.	35·52
Coke per cent.	64·48
Coke yielded by 1 ton of coal	12 cwts. 3 qrs. 16 lbs.

Mr. Baynes states that this series of analyses show the coal to be very valuable for gas-making purposes. The yield of gas is good, and the illuminating power high; whilst the sulphur in the coal is low, and the moisture trifling. The carbon in the coal is in good proportion, which causes it to be well adapted for heating purposes.

The Silkstone coal has been proved to be well adapted for converting into coke, and at present there are 44 ordinary beehive ovens in full work, but it is intended to put down about 100 more. The coke is made from the small coal, which is first thoroughly washed, and the quality is such that it realises as high a price as the Durham, whilst the demand is in excess of the output, more particularly for the production of Bessemer steel at the works in Sheffield.

The valuable clays found in connection with all our coal measures are being rather extensively worked at Hoyland, and even now by hand they are producing at the rate of 120,000 a month. Indeed, there is no reason why our colliery owners should not derive more advantage than they have hitherto done from their fire-clays, more especially when the coal trade is so very quiet and prices so low. Looking at the demand for bricks, it would certainly appear that a great deal more profit could be made from them than in selling coal at the present rate.

At Hoyland there are the usual working shops and offices on a scale adapted to a much larger business than is now being done, for when in full operation the colliery will turn out a vast quantity of coal. The present production is about 500 tons per day, but when all the necessary driving out and the other underground work is completed the output will be from 1500 to 2000 tons per day. Even with the latter quantity going out the pits will last for a great number of years, seeing that the area of the coal field is about 1200 acres, whilst the seams being worked would give at least 12,000 tons of clear coal to the acre, there being little or no waste, seeing that the small coal is utilised in the coke ovens. The lessors of the coal are principally the Earl of Fitzwilliam—himself a large colliery owner—and the Rev. H. B. Vizard.

In all departments connected with the colliery there is an efficient staff of officials, Mr. John Higson being the chief and consulting engineer, Mr. Newman the agent and commercial manager, and Mr. Holt the underground manager. When the colliery gets into full operation it is expected that it will find work for 1000 hands; and as the coal has already obtained a high reputation in the London as well as foreign markets for household purposes, as well as for gas making, for which latter the analysis shows it to be truly excellent, there is no doubt but what the Hoyland Silkstone Colliery will be a most successful one, and whilst fairly paying the owners for the spirit and enterprise they have displayed will be the means of founding a large and prosperous community in connection with it.

ROCK-BORING MACHINERY—No. III.

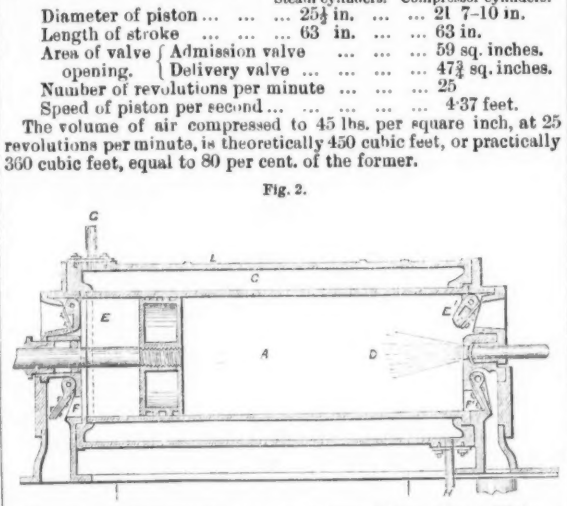
At the Blanzy Collieries, Montceau-les-Mines, France, air compressing apparatus is employed for the purpose of running rock-boring machines and underground locomotives. One building contains a Blanzy and Sommeiller compressor, another a Blanzy compressor, the three machines affording 350-horse power. The air for the rock-boring machines is compressed to a tension of three atmospheres, or 45 lbs. per square inch, and is conveyed in pipes from the receiver to galleries 150 fms. below the surface. Twelve Darlington boring machines are employed in driving levels and sinking shafts.

BLANZY COMPRESSOR.—This compressor is formed of two horizontal cylinders placed at the end of two steam cylinders. The absorption of heat occurring during the compression of the air is effected by means of water circulating between the air cylinder, A (Fig. 2), and an outer cylinder, L, and also by means of a spray jet of water, D, forced directly into the compressing cylinder. The inlet valves, E and E', as well as the outlet valves, F, F', are in the cylinder covers. Cold water is passed into the annular space between the air and jacket cylinders by means of the pipe, G, and discharged by the pipe, H. The principal dimensions of this compressor are—

	Steam cylinders.	Compressor cylinders.
Diameter of piston	25½ in.	21 7–10 in.
Length of stroke	63 in.	63 in.
Area of valve opening. Admission valve		59 sq. inches.
Delivery valve		47¾ sq. inches.
Number of revolutions per minute		25
Speed of piston per second		4·37 feet.

The volume of air compressed to 45 lbs. per square inch, at 25 revolutions per minute, is theoretically 450 cubic feet, or practically 360 cubic feet, equal to 80 per cent. of the former.

Fig. 2.



MINERA COMPRESSOR.—At the Minera Mines, North Wales, a twin-cylinder direct-acting compressor is employed. The steam and air cylinders are each 10 in. diameter, length of stroke 30 in.; weight of fly-wheel 60 cwts. The inlet valves in the air cylinders are of leather, stiffened by means of iron plates. Outside of each cover is a hopper-shaped receptacle, into which water is discharged and regulated by means of cocks. The minimum speed of the engine is 7 strokes per minute, maximum speed 45 strokes, or 225 ft. per minute. At a speed of 20 strokes per minute the theoretical quantity of air compressed to a pressure of 45 lbs. per inch is 17 3–10 cubic feet, or taking the actual result at 80 per cent. the volume is reduced to 13 8–10 cubic feet per minute. To regulate this engine when the rock borers are at work a weighted valve is placed between the air receiver and the steam throttle valve, which closes the latter when the pressure of air in the receiver exceeds the dead weight of the former.

At the Portskewet tunnel, near Chepstow, where a heading is already driven a considerable distance under the Severn, a vertical compressor is employed. The cylinder is 13½ in. diameter, stroke 17 in. long. Speed required for running two boring machines 60 strokes per minute. Compression of air necessary for working two borers effectively 60 lbs. per inch. The volume of the cylinder multiplied by the number of strokes is 158 cubic feet per minute, and this sum divided by four atmospheres gives 39½ cubic feet, or 19¾ cubic feet per boring machines. As, however, the volume of air compressed will probably not be more than 70 per cent. of the theoretical result, the cubic feet of air compressed to 60 lbs. per inch is (19·75 × 0·70) 13 8–10 cubic feet per borer per minute.

The compressor employed at the Maesteg tunnel, near Bridgend, consists of two vertical single-acting air cylinders, each 30 in. diameter and 24 in. stroke. These cylinders are driven by a pair of 12-in. cylinder horizontal engines, 24 in. stroke, making 120 revolutions per minute, consequently the intermediate gearing between the engines and compressor is proportioned so as to make 1 stroke in the compressor cylinders for 5 strokes in the steam cylinders. The theoretical contents of a stroke made in the air cylinder is 10,848 cubic inches, or for the two cylinders 21,696 cubic inches. As the number of strokes is 24 per minute, it follows that 301 cubic feet of air is available for compression; taking the actual result at 70 per cent., and four atmospheres for the compression, it follows that two borers consumes $\left(\frac{301 \times 0{\cdot}70}{4}\right)$ 52 feet of compressed air, or 26 cubic feet per machine.

At Cwmbrain, where two of McKean's 3-inch cylinder boring machines have been employed in driving a heading, the compressing machinery consists of a horizontal steam engine, driving three single-acting air cylinders. Diameter of steam cylinders 12 in., length of stroke 12 in.; speed 80 revolutions, or 160 ft. per minute. In order to drive two of McKean's 4-inch cylinder drills together, it is intended to supplement the compressing machinery referred to by a steam cylinder 20 in. diameter and 3 ft. stroke, in connection with an air cylinder 18 in. diameter and 30 in. stroke.

JOHN DARLINGTON.

ON STAMPING MACHINERY.

SIR,—In the Journal of July 28 you published some valuable information on the subject of Stamping Machinery in America, and as the mining industry of this country is in a depressed condition at present every improvement in machinery that effects economy in any way deserves the most serious consideration of miners.

When the figures referred to are grouped, as in the following table, they forcibly suggest that gravitation stamps, however venerable, are not the most effective or economical.

Disintegration is best effected by accelerating the stamps, and gravitation does not admit of acceleration beyond the limits already attained, hence the necessity to resort to other mechanical principles, as exemplified in the flexible stamp, No. 10 in the present list, which on comparison with the gravitation stamps shows that it stamps 100 tons in 24 hours, and requires only 18¼-horse power, while No. 1 mill, stamping 100 tons in 24 hours, requires 57-horse power, this also being an average of the American stamps.

No.	Name of mine, or stamp.		Number of drops per minute.	Fall of stamp head in inches.	Weight of stamp head in lbs.	Tons of rock stamped in 24 hours per head.	Horse-power per head.	Horse-power required to stamp 100 tons.
1	International Mill, White Pine	Dry	93	7¼	750	1·10	1½	102·27*
2	Ditto	Wet	87	7½	750	1·57	1½	71·65
3	Stanford Mill, White Pine	Dry	95	8	750	1·73	1½	65·02
4	Raymond and Ely, Pioche	Dry	95	8	750	1·60	1½	70 31
5	Key Stone, Amador County, California	Wet	85	8¼	750	2·25	1½	50 00
6	Meadow Valley Mill, Pioche	Wet	85	9	750	2·07	1½	54·34
7	Eureka Mill, Carson River	Wet	90	9	900	2·65	1½	42·45
8	St. Lawrence, Placer County, California	Wet	90	10	650	2·85	1½	39 47
9	Hunter's Valley, Mariposa County	Wet	70	11	650	1·75	1½	64·28
10	Elephant Flexible Stamp, in Cornwall and New Zealand	Wet	140	12	500	13·50	2½	18·50

* Average 57½-horse power required to stamp 100 tons of stuff.

Aug. 13. —— M. P.

THE PROPOSED NATIONAL SOCIETY OF COLLIERY MANAGERS.

SIR,—It is already a recognised fact that, as regards technical education we, as a nation, are far outstripped by some of our continental neighbours. There are few institutions in Britain at which students are trained for the particular profession or calling they intend to follow, or for which they are naturally most suited. Our government has jealously guarded our persons, and fanatically tinkered our religious sentiments; but hitherto little or no care has been exercised over our technical abilities. All are pushed through the same fixed codes of education as through unyielding iron meshes. The system casts in the same mould and stamps with the same dye an heterogeneous medley of embryotic tinkers, tailors, soldiers, and sailors. Boys with the national capabilities of philosophers are turned out and remain labourers because their fathers were such. They may while at school show an aptness for particular professions, but under our present system of education they are not advanced, and may be forced by circumstances to adopt a calling in which their talents may to a great extent be useless. The hard lot of the generality of mankind makes it necessary for them to seek some easily obtainable means of earning a living. Generally speaking this is found in callings of hard manual labour, requiring little or no expensive training, in which the overpowering exertions of the body seem to deaden the loftier action of the mind, stinting its growth in the bud, and robbing it of the time necessary for its full cultivation. It is true we must always have a large proportion of actual workers, but it must not be forgotten that there are men filling that position who, if educated and trained, are capable of something higher, and even the workers would perform their task with greater ease and skill if educated to it.

When we look around what a vast amount of talent is wasted and misapplied. The convicts' cell is frequently represented by talents—misapplied, it is true—naturally of a higher order than those that adorn the judges' bench; and had a system of education existed

whereby those talents could have been recognised in the bud, and directed in a proper channel, the judged might have occupied the place of the judge.

How often, too, is its place usurped by that ignorance that blunders through or cunningly lives upon the wisdom of other people. The natural genius of uneducated men who are compelled to fill humble positions frequently supplies the means by which others manage in a precarious way to fill situations they are altogether unfitted for. Thus great abilities may become the tools of the ignorant, and their possessors serve as platforms to raise above the common level unbashful adventurers.

Turning more especially to our own profession, which it is our object to advance, we see above all the great want of technical education; and, since no national system exists, a step in that direction on our own account would prove a worthy object for our proposed society. A lifetime is almost too short for learning everything connected with mining, and time ought to be carefully husbanded, and spent only in gaining knowledge and experience bearing upon the subject. Just now the tide seems to be running in favour of higher education and science. The position requires it, no doubt, though we trust it may not be pushed to the injury or neglect of practical knowledge. What is most required is a suitable blending together of theory and practice in proper proportions, and how can this be better attained than through the medium of technical institutions properly equipped for teaching the relationships of both. In such institutions students intending to enter the profession might be especially educated for it. Evening classes, too, might be got up, and lectures given in the different districts for the benefit of managers and young men serving their apprenticeship. Intelligent boys, miners, deputies, and overmen might also attend, and receive instruction in the sciences bearing on mining, &c. This would assist many in filling the subordinate positions successfully, while those possessing superior abilities might be advanced and educated for something higher. Real merit, in whatever position it may be found, ought to be advanced and promoted if possible.

The erection and support of some college or colleges at which students may be especially trained for the profession of colliery manager ranks first, and justly so I think, among the objects of the proposed society. This object will not, however, be gained without an effort, but will require much time and energy to build up. For the benefit, however, of future managers and coalowners in general, for the safety and welfare of workmen, and for the future prosperity of our country, the achievement of it, or even a step in that direction, ought to receive our careful attention and united support. With these success cannot fail. TOM P. MARTIN.

Workington, Aug. 15.

THF HULTAFALL LEAD AND BLENDE MINES, SWEDEN.

SIR,—A more enjoyable trip than the one I have just taken can scarcely be imagined, and I strongly advocate more active measures on the part of shareholders in mines by visits to the localities in which they have invested, or are deliberating upon investing, and consider that for the purposes of health and pleasure a summer trip may just as well be taken with a business object as without one. Taking this view of the matter, and embracing the opportunity of having for companions several gentlemen of acknowledged practical mining ability, I left London on Friday, July 27, by the 3 o'clock train for Hull, arriving there at 8 20, and embarking on board the steamer Rolla, which sailed at 6 o'clock on Saturday morning. After a most pleasant passage I arrived at 6 o'clock on Monday morning at Gothenburg; the train left here at 8·40 A.M. for Hallsberg, and the scenery between these places is most grand and picturesque, the whole country being dotted with undulating fields, forests, and beautiful lakes. I arrived at Hallsberg at 3·50 P.M., where we remained the night, there being *Rum for Resande*—rooms for travellers, and the next morning (Tuesday) took the train to Mariadain, about 12 miles, and were driven from thence in "carryalls" about 4 miles to the Hultafall Lead and Blende Mines.

What astonished me on alighting was the enormous quantity of ore at surface, computed by Capt. Bankart, the general manager, at 800 tons. Great activity is being shown in the erection of smiths' and carpenters' shops, &c., and there are several comfortable cottages on the mine. This sett is separated from the celebrated Vieille Montagne Company by a narrow lake called Try-sjon. About 30 miners, &c., are at present engaged, and owing to the large number of Swedish iron mines being suspended, labour is not only very plentiful but cheap; the average amount paid is 12s. per week.

The present concession to the Hultafall Company is a length of 150 fms. east and west, with an unlimited extent west, and 80 fms. north and south, with one mile extent north. To the east beyond the present boundary are four shafts, varying in depth, and called Old Silver, Peter's, Christiana, and Ward's. Several thousands of pounds must have been expended on these trial pits, and which are directly on the course of the Hultafall lode, to be seen in Maxfield's shaft. It would very greatly enhance the value of our sett if these concessions were granted to it, and I am pleased to hear that arrangements are being made to do so. There is a cross lode to be seen south called Gustaff's, and I may here state that the ore seen at surface at all these places, both lead and blende, was of the richest description, similar in every respect to the Vieille Montagne, and identical with that at surface, and with stones which I broke myself in the bottom of Maxfield's shaft; this shaft is sunk 65 ft. from surface upon the lode, and from which 800 tons of picked lead and blende have been extracted, and is now at grass. I had eight shots fired in the bottom of Maxfield's shaft—five at Perkin's trial shaft, and one at Alexandria's trial pit; I saw the whole of this brought to surface, and four boxes were nailed up in our presence containing ore broken by Capt. Arthur Waters before the blasts for him to take with him to assay. I am looking forward with pleasure to read his report, which I feel convinced will fully corroborate the opinions expressed by others who have seen this sett that we have a magnificent property, capable of returning very large quantities of mineral, and that time and capital are alone needed to make it a great success. Several practical miners have said that it bids fair to become equally as remunerative, others say superior, to our rich neighbour the Vieille Montagne Company, but having seen this property, which has been worked 22 years, the thousands of tons of rich lead and blende at surface, their railway which cost so much, and thinking of their enormous capital, I cannot endorse such sanguine expectations, at all events in my lifetime. That we have a splendid property I am certain, and believe "One and All" are anxious to make it a paying one.

The dressing-floors, which are to be under the management of Capt. Perkins, are to be laid out at Salaholm, about 3 miles from the mines, and only 600 ft. from the shipping port, where a mill with a splendid fall of water has been secured. A light tramway will be laid down to facilitate the transport of the ores, and the whole is to be pushed on at once, as fast as possible, and so I wish the Hultafall Lead and Blende Company the success it deserves. There is but one requisite, I think, to make it a success—sufficient working capital. Capt. Southey thinks half ours enough, I hope it will prove so. As far as I am concerned I wish we had double, and I am pleased to hear that this is also contemplated. An insufficiency of capital has ruined hundreds of companies, and good ones too, and I dare say Capt. Waters will bear me out when I say that nearly all the mines in Shropshire would this day be considerably more flourishing if they had started with double the working capital that they did. Economy is all very well, and when you have no money left it is mostly exercised. It would be a pity to spoil the good ship Hultafall for a ha'porth o' tar. We drove from Salaholm to Askursund, about 12 miles, and in speaking of miles I mean English ones, the Swedish mile is 6⅔rds of ours, there is excellent hotel accommodation here, the Gästgifvaregarden is the best, and where we obtained a good supper and bed, starting the next morning, Wednesday, for Wretstrop, 12 miles. Some of our party left direct for Gothenburg, to take the steamer back to Hull, but a most delightful tour can be taken from hence if time is not pressing, as Mr. Bowe and myself can testify. We returned home *rid* Stockholm, 143 miles, 7 hours journey only; from thence to Malmö, breaking our journey at Nasjö, 384 miles, 18 hours; Malmö to Copenhagen, 16 miles, 1½ hour; Copenhagen to Körser, 56 miles, 3 hours; Körser to Kiel, 80 miles, 8 hours; Kiel to Hamburg, 65 miles, 3½ hours; Hamburg to Cologne, 375 miles, 9½ hours; Cologne to Mayence, 123 miles, 4½ hours; Mayence to Cologne, down the Rhine, 160 miles, 8 hours; Cologne to Brussels, 164 miles, 6 hours; Brussels to Calais, 152 miles, 5 hours; Calais to Dover, 22 miles, 1½ hour; Dover to London, 78 miles, 2 hours; thus we travelled some 2720 miles, occupying 138 hours, reaching London on Sunday, Aug. 12, having seen all the principal sights in the places mentioned. I am afraid my letter has already surpassed the space usually allowed for correspondents, and so I will not trespass further at present.

Threadneedle-street, Aug. 15. R. H. M. JACKMAN.

DAVIS v. THE FLAGSTAFF SILVER MINING COMPANY.

SIR,—My attention has been drawn to a statement made in the *Mining Journal* of Saturday last to the effect that inasmuch as Mr. Davis's Chancery suit in London had been withdrawn Mr. Billing is now the only creditor of the company. I am Mr. Davis's solicitor here, and in his absence in America I trust you will allow me to correct this statement, which might otherwise mislead the public.

The reason why I offered to abandon the Chancery action here was—first, because I believed the company, practically, had no assets in this country; secondly, because it had become unnecessary, inasmuch as Mr. Davis left Europe several weeks ago for the express purpose of commencing his suit against the company in the American Courts for the same claims; and thirdly, because the Chancery action hampered an action commenced under the attachment process in the Lord Mayor's Court, London.

You will observe, therefore, that so far from Mr. Billing being the only creditor of the company, Mr. Davis is actively proceeding in the American Courts to prosecute and establish his claims, which amount to over 90,000*l.* JOHN W. SYKES.

St. Swithin's-lane, Aug. 13.

CLAUDET'S SILVER PROCESS.

SIR,—It may interest many of your readers, both here and abroad, to know that under the above process the value of silver and gold precipitate now being obtained from burnt Spanish and Portuguese cupreous pyrites is equal to the sum of 30,000*l.* per annum.

In a paper read before the Society of Arts in February, 1876, Mr. John Arthur Phillips, in referring to Claudet's Silver Process, made the following statement:—"The proportion of silver recoverable from each ton of burnt ore—about 1 in 60,000—appears at first sight very small, but when we consider that no less than 365,000 tons of these residues are annually treated in the United Kingdom its importance becomes apparent. If the whole of the silver and gold which could be extracted from the ore by Claudet's process were annually recovered they would represent a money value of at least 42,000*l.*"

As there is still one large company who have not yet adopted the process, the silver precipitate from whose ores it has been estimated would amount to an annual value of 20,000*l.* to 25,000*l.*, it will be seen that the total annual value of precipitate to be obtained was under-estimated by Mr. Phillips. This difference is explained by the fact that the ore now being imported by one company contains a larger amount of silver (contents about 1½ oz. per ton of ore) than the ores on which Mr. Phillips based his estimate.

The success attending the introduction of Claudet's process will be the more readily appreciated by your readers if I add that previous to its being brought forward the whole of the above values were wasted and lost, and that the cost of working the process, including the loss of iodine, does not exceed 10 to 15 per cent. on the value of the silver and gold obtained. J. G. B.

London, Aug. 14.

LEAD MINING—"EXPERTS" v. "PRACTICALS."

SIR,—In mining operations it is far more easy to detect those concerns that will not and do not pay, or are not and will not prove advantageous to investors, than it is to point out and distinguish with unerring certainty those enterprises that do and will continue to yield remunerative dividends from "gains over costs of production," and continuing over a series of years, thus repaying capitalists for the anxiety, delay, and hazards ever attending on speculative pursuits; and especially so in that of mining, which from its nature necessarily involves groping somewhat in the dark for the hidden chambers of mineral wealth embedded in the depths of the earth. It is true that experience, and a knowledge made keen through practice, have done much to unravel the laws of Nature, while the sciences and the arts, coupled with mechanical skill, enable the true and earnest miner now to detect the existence of minerals in lodes in paying quantities with far fewer risks than formerly; yet all must admit that we require knowledge, and well applied, to acquire success. Our managers should possess intelligence, with earnest and constant industry, geological, mineralogical, and mechanical experience and skill; strict economy should be observed in the expenditure of capital, and in rapid realisation of pioneer points; then, having the ores discovered, they should be excavated and rendered marketable so soon as practicable, thus economising time and standing charges, securing to the proprietories the maximum profits, irrespectively of the interests of landlords, merchants, and executives. Many a mine has been worked without profits to shareholders, yet having sold thousands of tons of minerals, while 25 per cent. of the gross value would have been available for dividends had the workings been prosecuted with double vigour and dispatch. There are many practical and honourable mine agents whose services are ignored and dispensed with for speaking the truth, while others, who possess less than a tythe of their experience and usefulness, are acknowledged and elevated to the highest pinnacle of fame, and under the euphoneous appellation of "experts" they manage to mesmerise the public with elaborate reports, shrouded in visionary and obscure predictions; that if, and if so-and-so come off, and if, and if so-and-so be the case, then, if you drive far enough and sink deep enough, if the ore be there then you will have it, and if it be not there then you will not. Surely legitimate practical mining does not require these rambling theoretical "experts," when for a "fee" investors can have the opinion of a 'Hitchens," the discoverer of Devon Great Consols, a Bedford United, a Holmbush, and a Hingston Down? A "Southey" who, after "experts" had condemned West Chiverton, resuscitated the property, and rendered it one of the greatest successes of the day, and under whose advice the Hultafall, in Sweden, was purchased by Mr. George Batters, and promises to pay from 25,000*l.* up to 50,000*l.* dividends a year. A "Waters," who is the practical manager of Leadhills, Roman Gravels, Tankerville, Ladywell, and other mines of repute, and who unquestionably knows how to "unearth" the ores and realise them without loss of time, and which implies minimum "standing charges." Then we have a "Teague" and a "Thomas," in Cornwall, and who have respectively achieved marvellous results at Tincroft, Dolcoath, and other great and important mines under their control.

The prices of established lead mine shares have succumbed of late to the ruling commercial pressure of the times, and in several cases the downward tendency has occurred in the face of enhanced present and prospective inherent value. Leadhills in Scotland, with unusual prospects, and a large and increasing yield, forms no exception; shares that a short time ago sold at 7 to 7½, and even 8 each, are now offered at 6; while Roman Gravels, from 14 to 15, have receded to 9, 9½ a share. Tankerville, forced up to 8½, 9 a share on a rumoured resumption of a dividend at the last audit, but which was not declared, stand at 6¼ to 6⅜; the last dividend was 5*s.* in December, 1876; these shares at one time were forced up to 24, 26 each, but the total dividends up to this date have been only 4*l.* 17*s.* a share, so that it is evident that 10*l.* a share was the full value at its best, hence all investors should consult practical authorities ere they embark in Stock Exchange companies. This kind of undertakings is regulated in price more from the operations of dealers than intrinsic worth. Investors, therefore, become often deceived through their want of that practical knowledge necessary to discriminate between the inflated and fashionable market favourite and the neglected, though truly sound and permanent dividend mine. The Van and the Great Laxey are two widely differing properties as regard reserves of lead and blende ores; large as the returns are, the monthly discoveries keep apace, if not ahead, of yield brought to market. The quarterly dividends of these mines are 12,000*l.* and 7500*l.* respectively, the first being situ Montgomeryshire and the latter in the Isle of Man. West C ton, from 18 to 19, has fallen to 13, 14; this is a heavy drop face of the mine looking well, and simply arising from a l 3000*l.* through the failure of a smelting company. Against adverse quotations we have important discoveries to record a Cambrian, East Chiverton, Llanrwst, Ladywell, Pateley B West Pateley Bridge, West Craven Moor, and East Craven The most important of these discoveries are strikingly in fav the Cambrian, West Craven Moor, East Chiverton, and Lla The Cambrian Mines are of historic fame, and in former days immensely rich both for lead and for copper. The present co have, under the practical control of Capt. Thomas Glanville, menced to work in earnest, yet the operations, though co tively in their infancy (the deepest workings being only 15 under the adit or day level), resulted in the discovery of lea lead and copper ores, variously reported as being worth from to 50*l.* per fathom for each mineral. The success at Llanrwst now become apparent, and the immediate future is fraught lively interest to those who have awaited calmly the result o velopment and the erection of driving and dressing machinery development of a mine requires time, as well as skill and pra knowledge, to render available discoveries of mineral wealth of the most important character. Hence the delay in bringing ores to market at Llanrwst. The construction of reservoirs, m of leats, erection of machinery, of dressing-floors, and the paraphernalia required in the manipulation of the produce veins, to render the ores contained therein marketable, have been surmounted, and, according to the reports of many reco authorities, Capt. Knapp has the opportunity to realise all h dictions, and we wish him success. Operations at West C Moor are progressing satisfactorily, and during the two years the present company has been at work considerable quantit lead ores have been discovered, the various points ranging 1 to 2, 3, and even 4 tons per fathom. These results, added t fact of Cockhill and Sunniside Mines, stretching out to the eas Grassington to the west, speak volumes in favour of the prop

The workings at East Chiverton are down to the 74 fm. leve the lode is equally crystallised and embedded in the same roc mation as the productive veins of East Rose and the Shep which stand at the head of lead mining in Cornwall. It is a f of importance in favour of East Chiverton that the east and lodes are intersected by the same north and south veins that tr the setts of East Rose and the Shepherds; hence the electri magnetic currents are identical. The 74 end driving west to West Chiverton is valued at 25*l.* a fathom, and the lode op width and promise as developed. The lamentable shifts to tin mining in Cornwall is reduced is strikingly illustrated in Agar, which possesses one of the richest lodes in Cornwall, y gains spring from the workings. The company is compelled the products in the "stone" instead of dressing and roasting mineral on the mines, arising from the difficulty of the ex in obtaining the landlord's consent to erect a "burning house convenient and contiguous position to the dressing floors. Th night's produce, ending August 3, was 149 tons 7 cwts. of ore, ing 8 tons 4 cwts. 7 lbs. of black tin, which realised in its state 234*l.* 18*s.* 6*d.* only. This quantity of black tin but for t sence of a "burning house" would at 40*l.* a ton have sold for sl over 328*l.* This is a sad difference, and most disastrous to t venturers. Wheal Agar should be a dividend mine if tin r in Cornwall is ever to pay again. R. TREDINNICK

Dealer in Stocks and Sh

Exchange, 66, Coleman-street, London, Aug. 16.

WHEAL GRENVILLE MINING COMPANY.

SIR,—The secretary of the above mine seems to have bee informed, and that the second-hand materials supplied to the are equal to all requirements. If the majority of the shareh are satisfied I have done with the matter, although for myself not believe in second-hand materials of any kind, and with a tant Shareholder" should have preferred another call and had

London, Aug. 11. W. LEA

WHEAL GRENVILLE.

SIR,—As a shareholder I am glad to see that the secretary h the manliness to openly retract his statement in reference to th work supplied to Wheal Grenville. He could not have seen if he did he could not know good from bad pitwork. The evi by a false statement is not, however, overtaken. Mr. Leech, experience is so extensive of pitwork and mining that he is prised new pitwork has not been bought. Poor innocent! ever know any mine where a whole 100 fathoms of new pit were put in where old pitwork could be had, if so, where? I 25 years experience, and never saw or heard of such a thing. had been done here I should have condemned it, for instead of 160 fathoms required costing 650*l.* or 700*l.*, they would have 1100*l.* or 1200*l.*, and not been 100*l.* better, if as good, for flaw castings are not always discovered until tested, when time money to replace them are required.

I saw the pumps before removal to Grenville, as I have since, and these, as well as everything Capt. Hodge has bought the mine, are of the best and strongest character. Anonymous respondents may throw the arrow which others may rankle in to carry a selfish purpose. Let shareholders see for themselves, accept the opinions of Capt Hodge, or the engineer of the mine of any practical miner or judge of mining operations. In Ca Hodge the company have no merchant, or merchants' underling, agent of half-a-dozen mines, or a man who has time to run over county, looking at this mine or that, but a man who attends to work, thinks only of his duty to his employers, and minds his business.—*Aug.* 13. SHAREHOLDER.

CARDIGANSHIRE MINES, A.D. 1877—No XXI.

SIR,—Since I wrote you my last letter I am more than pleased being able to give you such information respecting the prospects the Cambrian Mines as must lead not only to the enrichment of fortunate shareholders, but must prove a boon to the mining munity of the county generally. The engine-shaft at Esgair Fl the eastern portion of the mines, is now down 5 fms. under the The vein has increased in richness every foot in sinking, and I ca not convey to you an adequate idea of the richness, and I may splendour, of the ore raised, being composed of nearly all the c of the rainbow, a very large quantity being of compact mala fact of Cockhill and Sunniside Mines, stretching out to the ea Grassington to the west, speak volumes in favour of the prop

The workings at East Chiverton are down to the 74 fm. leve the lode is equally crystallised and embedded in the same roc mation as the productive veins of East Rose and the Shep which stand at the head of lead mining in Cornwall. It is a f of importance in favour of East Chiverton that the east and lodes are intersected by the same north and south veins that tr the setts of East Rose and the Shepherds; hence the electri magnetic currents are identical. The 74 end driving west to West Chiverton is valued at 25*l.* a fathom, and the lode op width and promise as developed. The lamentable shifts to tin mining in Cornwall is reduced is strikingly illustrated in Agar, which possesses one of the richest lodes in Cornwall, y gains spring from the workings. The company is compelled the products in the "stone" instead of dressing and roasting mineral on the mines, arising from the difficulty of the ex in obtaining the landlord's consent to erect a "burning house convenient and contiguous position to the dressing floors. Th night's produce, ending August 3, was 149 tons 7 cwts. of ore, ing 8 tons 4 cwts. 7 lbs. of black tin, which realised in its state 234*l.* 18*s.* 6*d.* only. This quantity of black tin but for t sence of a "burning house" would at 40*l.* a ton have sold for sl over 328*l.* This is a sad difference, and most disastrous to t venturers. Wheal Agar should be a dividend mine if tin r in Cornwall is ever to pay again. R. TREDINNICK

Dealer in Stocks and Sh

Exchange, 66, Coleman-street, London, Aug. 16.

WHEAL GRENVILLE MINING COMPANY.

SIR,—The secretary of the above mine seems to have bee informed, and that the second-hand materials supplied to the are equal to all requirements. If the majority of the shareh are satisfied I have done with the matter, although for myself not believe in second-hand materials of any kind, and with a tant Shareholder" should have preferred another call and had

London, Aug. 11. W. LEA

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That this will be the cause of starting a great many other pro ties in that locality, and of being an immense service to the co generally, is beyond doubt. A few and very few months have afforded to do all the above, and if we could meet with some gentlemen of the same stamp a few months more would open other mines of wealth such as are to be found only in a few distri in this county, where lodes of such magnitude and richness are to be found, which would tend to stop the importation of many mil rals into this kingdom, and would prevent emigration by giving increased demand for honest labour at home, the effect of which have now but a faint notion of. If we could really bring home the

…ith to ourselves of what is being now suffered from the effects of …e emigration of our best miners to Australia and other parts of …e world, it would be such a lesson to us as would cause many a …apitalist to pause before investing in foreign in preference to home …ining, especially when we see such magnificent prizes as the Cam… …ian Mines in so short a time as a great and good example of what …e have at home, and which can be seen by any shareholder in the …ountry whenever he may think proper to do so in 24 hours. Any… …older holding an interest in these mines may see such a sight at Esgair …ir as both now that he may never have seen before, and perhaps never …ill be able to see its equal.

ABSALOM FRANCIS.

Goginan, Aberystwith, Aug. 14.

SIR,—I hope in my next to be able to give you some favourable par… …ulars of the starting of a large mine close to Goginan, and that in …ess than a month to be able to add an additional one to the list. …ow is the time for investment in this county, and they who do so …ith proper advice and judicious management will realise largely …n capital laid out.

LEAD MINING IN WALES—MANAGEMENT.

SIR,—May I ask you, in the interest of legitimate mining, to afford …e for the publication of the following article, which has been …warded to the Editor of the Cambrian News? So much has been …erted in the Journal on the subject of Welsh Mining that the ap… …ded remarks will be read with very general interest, and may …e useful in connection with other companies than that more par… …larly referred to.

A WELSHMAN.

ESGAIR HIR MINE well illustrates in many particulars some ob… …ainable phases in Welsh mining enterprise, and its history may …ad with interest and profit by those who feel disposed to invest …eir capital in undertakings respecting which, as a rule, they can obtain …ittle information beyond what is volunteered in prospectuses issued …y promoters of companies. That there is lead in paying quantities …mong the hills of Wales there can be no manner of doubt, and …hough it is equally certain there is lead at Esgair Hir, but whether the new company re… …ently formed will obtain the coveted mineral in dividend-paying quantities time …ill soon decide. If in the past the capital obtained in London, or even 50 per cent. …f what had been spent in developing the Welsh mines, for which ostensibly it was …ntended, mining in Wales would have occupied a less dubious position in the esti… …ation of the public as it does to-day. The Marquis of Londonderry, Sir Watkin, …he Osborne, Sir Pryse Pryse, and Col. Powell, the great landlords of the district, …hose estates lead mines are worked, are anxious to develope legitimate mining, …ut against mine jobbing, which is extensively carried on, and interferes pre… …udicially with the operations of companies like that recently formed to work …sgair Hir. So completely has the confidence of the inhabitants in the district been …haken by mere speculators and jobbers that shares in companies for working …ines are now seldom or ever taken by anyone who knows the country in …hich they are situated. This ought not to be so, especially as there are many …ines which, if fairly worked, would pay good interest on the capital expended. …The landowners, however, will not be restored until the landowners of Wales take …practical interest in mining, encourage the establishment of local companies, and …o some extent with local capital.

…The history of Esgair Hir Mine, with slight variations in the details, might …e told of a score of similar undertakings in Cardiganshire and elsewhere. …From 1870 to 1875 Esgair Hir Mine was worked by a company with a capital …of 40,000*l.*, after going on for some time an additional sum of 4500*l.* was raised …by calls. During the period the company was in existence lead worth some… …thing like 70,000*l.*, was raised and sold, and this sum was also invested in the mine. …The company was wound up, and early in 1876 the mine was sold with all …plant, machinery, &c., to Mr. Griffith Williams, of Aberystwith, for 1500*l.* …The purchaser worked the mine for about a year at a cost of not far short of 1000*l.*, …and in March last he sold it for about 2500*l.* A company was subsequently formed …with a capital of 100,000*l.*, and the mine was purchased for 70,000*l.* in shares, leaving …20,000*l.* for working the mine and other expenses. If this large amount for which …the mine has been purchased and paid for in shares was not to bear dividends until …the ordinary investors had received (say) 10 per cent. nobody would have a right …to complain, but that a mine sold for 2500*l.* should become worth 70,000*l.* and be …value a capital of 100,000*l.* requires faith—more faith than can be found in …me. Suppose a sum of 20,000*l.* out of the capital of 100,000*l.* ultimately finds …its way to Esgair Hir, and is expended there in developing the workings, it is not …unlikely that the results may show a decent return on the sum expended, but …what about the 70,000*l.* purchase money, and the expenses consequent on placing …the remainder of the shares?

…Capitalists in nearly all cases of new companies are led to expect large immediate …returns on investments in lead mines; and although experience is always teaching …the followers of these expectations, promoters of companies and captains of …mines continue to represent the properties for which they seek to obtain capital …on the eve of paying immense profits. This conduct on the part of promoters …of companies is, perhaps, not so extraordinary as the trustfulness of the public, …many of whom do not know the difference between a lead mine and a slate …quarry, but who nevertheless are willing to invest their money on the faith of glow… …ing reports, which in 99 cases out of 100 are less worthy of credence than the wildest …stories of the Arabian Nights. It must not for a moment be presumed, because pro… …mises are over sanguine and disappointment ensues, that there is no lead in Wales. …There is plenty of lead, and if honestly conducted mining is a business that pays. …Of course there are great risks, but then there are great prizes; and after all it is …well if a reasonable proportion of the money raised by companies was spent …in proving great whether lead mining would not be a safer and more profitable …investment than some of the so-called "securities" of foreign countries. Mining …has now ebb just now, and nothing would so quickly restore the confidence of …capitalists as to see the landowners and residents in the district once more taking …shares in Welsh mining companies. Everybody in the neighbourhood naturally …wishes to see a company like that formed to work Esgair Hir succeed, heavily …capitalised though it is, but whether anybody who knows all the circumstances of …the case believes success is possible is more than we are able to say. Fortunately …for investors in mines success does not depend upon beliefs, but it does depend in …a slight degree upon the amount of capital wisely expended on the particular …lode from whence the ore has to be drawn if dividends are ever to be paid.

NORTH LAXEY MINING COMPANY.

SIR,—It is due for the information of "A Shareholder," who has …thought proper to bring under notice my report of the 14th ult., to …state that I was reporting upon five weeks' workings. I presume …he is aware that this occurs in every mine once in three months, …and your June month's workings was for five weeks. R. ROWE.

Isle of Man, Aug. 14.

NORTH LAXEY MINE, AND ITS MANAGEMENT.

SIR,—Allow me to thank Mr. Murchison for his explanatory and …decisive letter in last Saturday's Journal in reply to mine of the …preceding week. It seems a pity that a person cannot assume an …anonymous title and write out his thoughts and views under that …title without being dubbed "unscrupulous," and I must ask you to …allow me a little more of your valuable space to enable me to reply …to some of the remarks he has made in his letter.

…First, he charges me with "unscrupulous misrepresentation." …On what? Because, in referring to the amount of his remunera… …tion to my fellow-shareholders (no one else can have any interest in …the matter), I have omitted a few words about as trifling in them… …selves as the amount they probably represent. Why, in giving those …particulars I never for a moment supposed that your North Laxey …readers would do anything else than corroborate them or otherwise …by reference to their balance-sheets; and, as a matter of course, …they would then fill in what was omitted, and estimate accordingly. …Then he gives us quite an exhaustive account of what the London …management has done and is doing, and questions our right of com… …ment; but after all he can only be referring to his own individual …acts and responsibilities, not those of the directors, as I see nothing …what he has enumerated (except the board meetings and signing …certificates and cheques) that cannot be disposed of by one man. …Referring to the work connected with the share and transfer ledger, …I cannot see why it should be introduced at all, unless it be to mis… …lead. I have reason to believe that that work may be looked upon …as "extra," and an extra fee be levied accordingly. Counting …the fee as 2s. 6d. for each transfer, we shall find it amounting in …the aggregate for the 580 transfers (which Mr. Murchison refers to) …to the sum of 72*l.* 10s. for the past year, making a nice little addi… …tion to the 10*l.*

…But in referring to the London manager's remuneration and work …we must not overlook the directors and their "dues." We hear no …word of reply or protest from them. They prefer I suppose (what …Mr. Murchison tells us he was tempted to do) to remain in the …"dying regions," and look down upon these complaints with silent …contempt. If that is the position they have decided to take up then …I believe us, as shareholders, to do something for ourselves towards …bettering the present unsatisfactory state of affairs, and I am fully …convinced that if the directors do not make some concession in re… …gard to their remuneration a course of action will be adopted which …will compel them to do so, or give up their position as directors.

…There is no doubt as to the quality of the property we jointly hold. …I have revisited it both above and underground, and spoken with old …miners who have worked in it, and who have corroborated my own …observations—that in North Laxey we have a most excellent mine …which has been worked and managed in a judicious manner. It is this …one question which is disturbing the minds of more than one share… …holder, and will do so until a more satisfactory basis of working …is established.

I shall be glad to communicate with "A Shareholder" if neces… …sary, but at present, with the exception of an hour or two for cor… …respondence, I have very little time to spare for going into this …question. I trust, however, that we may not be forced into un… …pleasant antagonisms, but that the directors will condescend to …enter into the consideration of these complaints, and endeavour to …settle them in a satisfactory manner.

ANOTHER SHAREHOLDER IN NORTH LAXEY.

Manchester, Aug. 14.

THE PRICE OF TIN.

SIR,—A wise man says, "Hope deferred maketh the heart sick." Miners have been so long looking out for a rise in the price of tin that they are sick—almost unto death. From all that I can gather a rise in the price of tin is less likely now than ever it was, because the hoped for falling off in the foreign supply is not likely to be realised. Instead of the resources in Australia falling off, fresh dis… …coveries over an extended area are being made. It is said that lodes of tin have been discovered where it was at first supposed they did not exist, affording ground for a belief that Australia is a highly stanniferous continent, the supplies from which are sure to keep down the price of tin. A few days ago I held a brief conversation with a very intelligent mine agent (Capt. W. Teague, jun.), who said, when referring to the low price of tin—"We must now do all we can to cheapen the production." I believe it is in that direction we must move in order to keep our mines going. The boring ma… …chines now coming into general use will effect a great saving in the cost of exploration and development. These machines, I dare say, will come into general use in most mines after sufficient trials have been made to prove which of the several machines now in use is the best. Capt. J. Thomas, of Dolcoath, and Capt. Teague, of Tincroft, after a little more experience, will be able to tell us the results of their experience, to guide other managers in their choice of boring machines.—*Aug.* 16.

R. S.

TREBEIGH CONSOLS MINE.

SIR,—In your valuable Journal of last week I saw a letter reflect… …ing on the management of the above mine. Now, Sir, as I do not like replying to anonymous letters, I will just say, if the writer is a practical miner, and has the interest of the shareholders at heart, I shall be glad to meet him on the mine, and there discuss Mr. Hitchins' proposed mode of working it and the present; but if he is a non… …practical I should decline it, believing that his aim is either to put enmity between the shareholders and myself, or in trying to obtain some practical mining knowledge which he is now devoid of.

St. Ive, Aug. 16.

JOHN GIFFORD.

CWM DWYFOR MINE.

SIR,—Having recently visited this mine, I think I may safely assure "Tourist," whose letters on the subject you lately inserted in the Journal, that this mine will very shortly prove to be "a good bal," and also that Capt. Jewell, the agent there, is "a good cap'n." As to the strength of the Cwm Dwyfor lodes at surface there has not been a question, for they were laid open, but doubts were, I be… …lieve, expressed by some parties, who had, probably, never visited the property, as to the permanency of the lodes in depth; this, how… …ever, is no longer a matter of doubt, for in the level now being driven at 20 fms. westward, under the run of lead ground met with in the 10, the lode has just been cut into. At this depth, however, the ground has taken a dip westward, and, consequently, a fathom or so will have to be driven before they get fairly into the lode. The position of the mine is most favourable for working, it being situ… …ated on the side of a steep mountain, with a tramway and incline from the dressing-floors down to the Gorsedda Junction Railway; it thus enjoys the great advantage of cheap and easy communication with a shipping port, and also by means of the Cambrian Railway, at Portmadoc, with a trunk line of railway.

A SHAREHOLDER.

NEW CONSOLS.

SIR,—A gentleman who is perfectly conversant with all the pro… …ceedings of the directors in New Consols told me a few days ago that they, or the liquidators, are selling off all the effects on the mine, or that they have commenced so to do, and that he believes that there is no intention on their part to resume the works. He is of opinion that all the machinery will be sold off, either by public auction or private contract, and that the merchants will have nothing out of the estate, nearly all of which will go to what are called the mortgagees, or debenture-holders. It is, however, I understand, the intention of some of the creditors to bring before the Vice-Warden of the Stannaries (under whose supervision the winding-up is to be effected) all the irregularities connected with the management, that, so far as possible, justice may be done to the confiding creditors. It will then be made to appear how far the charge of 300*l.* per month interest was justified on the loans—so called. It is greatly to be lamented that a property which holds out such prospects of permanent good to the district should, by sheer mismanagement, have come to grief, and that so much evil has resulted to poor miners and to merchants. It has been intimated to me that to keep some dissatisfied merchants quiet they have been arranged with. I cannot vouch for the correctness of the statement, which may be unfounded. A strict investigation before the Vice-Warden will, I think, reveal to the world some interesting facts which should be known to be appreciated.—*Callington Aug.* 16.

OBSERVER.

Meetings of Public Companies.

BOTALLACK MINE.

The quarterly meeting of the shareholders was held at the mine on Wednesday. The purser, Mr. S. H. JAMES (in the chair) produced the accounts for the three months ending June, which showed—Debit: wages three months, 3243*l.* 13s. 4d.; merchants' bills, 482*l.* 19s. 5d.; coals, timber, carriage, &c., 1169*l.* 0s. 10d.: total costs for three months, 4895*l.* 7s. 7d. Credit: copper 20 tons, 116*l.* 4s. 10d.; tin sold from Botallack, 61¾ tons, less dues, 2324*l.* 0s. 4d.; Truthall, 25 tons, less dues, 1002*l.* 13s.; Carnyorth, 22¾ tons, less dues, 831*l.* 19s. 5d.; arsenic on account, 200*l.*; sundries, 38*l.* 3s. 6d.; loss on the quarter's working, 382*l.*, 6s. 5d.: total, 4895*l.* 7s. 7d. The balance due from the adventurers at the last account brought forward, 2419*l.* 4s. 4d.; the loss shown on the quarter, 382*l.* 6s. 5d., makes a total debit balance of 2801*l.* 10s. 9d., deducting from this calls received 27*l.*, leaves a debit balance now against the share… …holders of 2774*l.* 10s. 9d. The above accounts were audited and passed, and it was resolved to make a call of 2*l.* per each 200th share, which will realise 400*l.* for the purpose of reducing the above balance. The returns of tin ores as above credited in this account for the three months are 109 tons, the highest price realised was June 28 last, at 42*l.* per ton. The last price sold at was, Aug. 11, 40*l.* per ton, the average price per ton during the quarter was 39*l.* 12s. 6d. It was resolved that the committee be re-elected. The Chairman stated that all previous calls are paid, also, in reply to a shareholder, all coals delivered on the mine and charged in the account are paid for. A balance-sheet was also produced at the meeting showing all liabi… …lities up to the day of the meeting. The shares of Botallack (200) are held among 72 adventurers. There has not been any transfer of shares during the past quarter.

The agent's report states that at Wheal Loor at the 180 east they expect now to cut the good tin ground gone down under the 150. A winze sinking under the 130, about 10 fms., is in good tin ground. The 110 and 60 east is producing tin. At the Bissoe the 110 east, on a side lode, is looking very kindly, opening tin ground. Here are 42 men and boys opening and 47 men and boys stoping ground on tutwork and tribute. At Wheal Cock, the 135 is driving on a lode producing tin and arsenic. The ends east and west of cross… …cut at the 100, on new lode, are in fair tin ground. The 85 west is opening paying ground for tin and copper; 36 men and boys open… …ing and 31 men and boys stoping ground on tutwork and tribute. At Carnyorth, the 100 and 88 west, on new lode, are opening pro… …ductive tin ground. The 40 and 30 west, on Rodd's lode, are pro… …ducing good stones of tin; here are eight men opening and 38 men and boys stoping ground on tribute. The above report concludes by stating that although there is a falling off this quarter in the quantity of tin from the Wheal Loor lode, yet we consider the pro… …spects there are very good. The mine, on the whole, is looking very well for tin, but we cannot see any chance for increasing the return of copper. The ground opened in the three months in levels and winzes is 168 fms.

After the accounts were audited and passed the adventurers dined together, and on the usual loyal toasts being disposed of,

Mr. E. H. RODD proposed the health of their Chairman, and spoke in high terms of the valuable services he had rendered to the adven… …turers.——Mr. James, in reply, very much thanked Mr. Rodda for so kindly speaking of him, and in reviewing the progress of Botal… …lack, &c., said how the total costs for the past 12 months amounted to something over 20,000*l.*, and they had only lost about 250*l.* dur… …ing that time (and this amount included the interest debited on ac… …count of the stocked tin), so it would seem the mine had during the year's working about paid cost. He believed just now, as far as their returns of tin are concerned, the prospective view is very favourable, but it may be said in reference to the price of tin we are all working in the dark. He considers they had now many special points of operation in the workings, which offered very good prospects. They had much improved the drainage of the Bissoe part and Parknoweth by increased depth of adit, which would very much help to lessen their water charge this winter.

Mr. WELLINGTON, of Chyandour, made some very interesting ob… …servations at the meeting on the price of tin, and its production, &c. He considered the present returns of Cornwall about 1200 tons per month; about ten years ago it barely reached 1500 ton monthly. There was never such a consumption of tin as now, and no doubt the present low prices greatly stimulated the sale of this metal. As far as Cornwall is concerned it could very well compete with Billi… …ton, Banca, and the Straits settlements, but when we come into competition with Australia, Tasmania, and other great producing countries the results are proved to be most seriously prejudicial to the interests of the Cornish producer. In reference to Botallack Mine he attended a meeting at the mine in the year 1821, and had been (many years ago) associated with the executive and the adven… …turers for 17 years, during which time they divided 17,000*l.* in divi… …dends. On concluding his remarks he (Mr. Wellington) stated that he felt much pleasure in alluding to the services of the agents of Botallack, and proposing the toast of their good health he personally had the greatest confidence in the skill and energy displayed by them, and he was sure they were fully entitled to the confidence of the adventurers. (Hear, hear.)

Capt. F. BENNETTS, in reply, said how that in former years he had witnessed even darker prospects than they had seen of late. Just now no doubt the low price of tin was most discouraging to the miner; still he was not without hope of soon seeing better times. (Hear, hear.) At the Higher Mine they had gone through a splendid run of tin ground for about 100 fathoms long, and although the deeper levels are not now productive he was hoping they would soon run through the bar of poor ground, and meet with another run of good tin ground. (Hear, hear.)——The toast of the neigh… …bouring mines was given, and responded to by Mr. JOHN BOYN, of Wheal Owles.

WEST PATELEY BRIDGE LEAD MINES.

The second ordinary general meeting of shareholders was held at the offices on the mine on August 7,—Mr. BAXTER in the chair.

Mr. J. J. TRURAN (the secretary) read the notice conveniug the meeting.

The report of the directors and the manager were taken as read.

The CHAIRMAN: Gentleman, it affords me much pleasure to meet you on the mine, so that by personal inspection and inquiries you may be better able to form a correct estimate of the value of your property. You will have seen the satisfactory financial position of the company—indeed, it is not too much to say that few mining companies are in so strong a financial position—having an available capital greatly in excess of the amount necessary to thoroughly de… …velope our extensive mine. We have, too, this further obvious ad… …vantage—that as the mine has not been weighted with dead or no… …minal capital a comparatively small out-turn of lead is all that is required to ensure handsome dividends. We have an extensive mine, three-quarters of a mile upon the run of 13 well-known and well-defined lodes, and several cross lodes, and, as I have said, ample capital. There are in all 20,000 shares, of which 11,675 have been issued; on 5375 of these 1*l.* per share has been paid, and on 6300 shares 3s. 9d. per share only has been called up, leaving 16s. 3d. per share, or 5118*l.*, available capital on the shares already issued. In addition to this the shareholders who have subscribed for their shares are entitled to an allotment of the same number of the unis… …sued shares, on which they will have to pay if and as required a sum in the aggregate amounting to 7875*l.*, which will give the com… …pany the benefit of 12,993*l.* Before I associated myself with the mine I had satisfied myself as to its value by personal inquiries and investigation on the spot. I do not profess to be a miner, but I am able to bring to bear a certain amount of business knowledge and experience, and I am compelled to come to the conclusion that we possess a valuable mine, and that with a small expenditure of capital, and in a comparatively short period, we shall begin to rea… …lise a good, if not a handsome, return upon the capital we have in… …vested. Everyone who has seen our mine expresses the same opinion. I should mention that the company has been in existence some 15 months, but during the first 12 months it had no vitality or life, the development of the mine having been carried on much less vigorously than justly warranted by its proved value. This was the case when I came here at the beginning of this year, and certain negociations extending over several months having been suc… …cessfully carried out I and Messrs. Mansell and Parrick called a num… …ber of gentlemen together, and in the course of an hour my friends and theirs had subscribed the whole of the capital necessary to bring the mine into a successful and prosperous state. (Hear, hear.) Most lead mines are capitalised at from 30,000*l.* to 50,000*l.*; to bring about profitable results such mines must necessarily return double the quantity of lead than in mines—*cæteris paribus*—with a capital of 20,000*l.*, of which 8000 shares are held in reserve, yet having ample capital subscribed to open out the mine. Nothing operates against the success of mines as profitable investments so much as inordinate capitals; not unfrequently is a remunerative and good mine thus rendered profitless to its shareholders—large and other… …wise remunerative returns fail to be divisibly profitable, because the capital is out of all proportion to the producing capacity of the mine. How much more satisfactory is it to all concerned when a mine is initiated upon an equitable basis—equitable as between shareholders and former owners. (Hear, hear.) We have, too, the paramount and almost exceptional advantage of having our mines drained to a depth of 56 fms. without one penny cost for pumping —a permanent charge in most mines sufficient to return to us good dividends. The drainage is effected by means of a horse-level, the use of which we have for 10*l.* a year. The driving on the Craven Cross vein at the 56 fm. level is the keystone in the development of our property. Some 25 to 30 fms. have yet to be driven to come under the perpendicular of the ore body, which, according to all the information we have been able to obtain, went down 3 ft. of solid lead. This ore body, representing from 20 to 30 tons, or be… …tween 300*l.* and 450*l.* per fathom, has not been seen since the latter part of the last century, when the influx of water necessitated the sus… …pension of operations. Besides this, a group of parallel veins will be intersected at this depth, and each vein in the adjoining mine has proved very rich. One of the Golden Fleece veins, at the bottom of No. 2 shaft, has a leader of solid lead, 8 in. wide, and im… …proving in depth; when I was underground a few months since this No. 2 shaft had been sunk 9 or 10 fms. There was then a good leader of lead, but it has gradually increased, till now, the shaft being down 14 fms., it is fully 8 in. wide, worth from 1½ to 2 tons per fathom, and improving as it goes down. It is proposed to sink

to a depth of 20 fms., and then to drive levels east and west; the manager expects to raise from this one point very large quantities of lead. No. 1 shaft is down 10 fms., and the indications point to good results in a few fathoms further sinking. Discovery shaft is down some 11 fms.; the lode is yielding rocks of lead weighing 1 to 2 cwts., and the indications are highly encouraging. We are surrounded by mines which have been and still are immensely rich. Not the least remarkable among these are the Grassington Mines, which from one vein alone returned to the Duke of Devonshire a net profit of some 60,000*l.* per annum for several years; the Yorkshire Lead Mining Company's property, which yielded from one "flatting," and in a few months, a net profit of 12,000*l.*; the West Craven Moor, which is opening out a good mine, and many others. I think all the shareholders who have just inspected the works at surface and underground are fully satisfied that our manager is opening out our mine with the greatest energy, and in a practical miner-like manner. On behalf of the directors, all of whom are present, I have given instructions to our manager to continue to vigorously open out our mine, there being ample capital to ensure that end. In mining time is money, so that to expend our capital expeditiously, provided it be laid out judiciously, is true economy. (Hear, hear.) In conclusion, all I can say is that if numerous rich lead veins, inexpensively worked, with a ready and effective means of converting the produce into marketable condition—if, I say, with these favourable and almost exceptional conditions, these mines do not in a short time equal, if not exceed, in productiveness, as well as dividends, any group of lead mines based upon a similar financial basis it will arise from mismanagement, of which we confidently believe our manager to be incapable. I will now move that the report and balance-sheet be received and adopted.——Colonel TODD seconded the proposition.

Mr. D. WILLIAMS, M.E. (the manager), in replying to questions put by different shareholders, explained that since the date of his last report the lode in No. 2 shaft had very much improved; it was opening out in a most encouraging manner. It was now 2 to 3 ft. wide, carrying a branch of solid lead 6 to 8 in. wide. The stope in the Craven Cross vein in the 56 was worth 12 cwts. of lead ore per fathom, and there was a good branch of lead on the foot-wall. The lode in the new discovery shaft had also improved since the date of his report; the vein was now 3 ft. wide, yielding some solid stones of lead weighing 1 to 2 cwts. The 56 had been driven a considerable distance on the Craven Cross vein, and he calculated it would take three or four months to reach the perpendicular of the rich ore body gone down in the bottom of the old workings—a course of ore reported to be 3 ft. wide of solid lead. This, he need scarcely add, was the most important point in the mine. They had in West Pateley the whole of the rich lodes which in the adjoining mines were proving rich 30 fathoms below their (the West Pateley) 56 fathom level, and wherever the country rock waf similar to that in which these rich veins were found to be standing they were always very rich. There were 56 fms. of ground high and dry. The reason the former workers could not reach them was because of the water—a difficulty now permanently and completely removed. The Craven Cross vein had been always reported as one of the richest in the country, having had a solid course of ore for 200 or 300 fms. in length, and under great disadvantages yielded enormous profits. The present company saved all the expense of pumping water, the several lodes having been drained to a depth of 56 fms. by means of a horse-level. This enabled them to work at one-fourth the cost. If the Craven Cross vein proved to be only one-half as rich as expected they would realise double the profit of those who worked it in 1790, besides which they would save 1500*l.* a-year, the amount then paid in connection with the pumping. He had the greatest confidence that the West Pateley Mines would in a few months prove a grand success.

Mr. F. W. MANSELL asked if there were any records extant as to the previous history of the mines?——Mr. DAVID WILLIAMS said there was very little known about the property. According to some of the oldest miners their fathers had worked in the mine, and they state when operations were suspended there was a course of ore left standing 3 ft. wide of solid lead. At that time pig-lead realised about 10*l.* or 12*l.* per ton, and coals had to be brought 15 or 17 miles.

The MANAGER, in reply to further questions, explained that he proposed to sink No. 2 shaft to a depth of 20 fathoms, and then to drive two levels upon the course of the lode; they were now opening out at this point a considerable quantity of ore—at least sufficient to pay for the sinking.

Colonel TODD said he went underground this morning at No. 2 shaft, and saw what he considered a body of solid lead. All he could say was if this were considered an unimportant part of the mine they had indeed a valuable property.

Mr. MANSELL said all must come to the conclusion that West Pateley was at least a sound speculation. In all mines there were chances and risks, but in this case they certainly had the maximum of chances and the minimum of risks.

A SHAREHOLDER remarked that he was perfectly satisfied with all he had seen. It seemed to him they possessed a group of favourably situated mines, acquired upon most favourable terms—mines that had a mass of rich lodes, which in the contiguous properties had given large profits for many years. Again, they had unusual facilities for speedy and economical development. If such conditions established a good mine West Pateley as a remunerative enterprise would seem to be assured.

The report and balance sheet were received and adopted.

Messrs. Baxter and Hammond, the retiring directors, were re-elected.

Mr. GEO. H. CARTER (public accountant) was re-elected auditor.

The CHAIRMAN said, as the mouthpiece of the board, he had much pleasure in stating that they were pleased and satified with the miner-like manner in which their manager was opening out their mine, and with the encouraging statement he had just made as to its favourable position and prospects. He begged to move that the best thanks of the shareholders be given to Mr. David Williams, M.E. (the manager).

Col. TODD had much pleasure in seconding the proposition, which was put and carried unanimously.

Mr. WILLIAMS thanked the directors and shareholders for this renewed confidence, and assured them that no effort on his part would be spared to achieve that success which he so firmly believed their mine would speedily realise. He had a large interest in the mine, therefore he was not only actuated by duty, but self interest would stimulate him to exercise every exertion to promote the permanent interests of the company. (Hear, hear.)

Col. TODD moved that the best thanks of the shareholders be tendered to their indefatigable Chairman for the personal trouble he had taken in bringing the company into its present satisfactory position, and for the lucid and exhaustive statement he had made upon the position and prospects of the mine.

Mr. HAMMOND had much pleasure in seconding the proposition, which, upon being put, was carried unanimously.

The CHAIRMAN thanked the shareholders for their vote. All must admit they had the best reasons to be fully satisfied with their enterprise, and the large interest he held in it was the most substantial evidence that he could adduce as to his belief that they had a mine which would proved to be a great success and a highly remunerative investment. He should be very much disappointed if, before the next annual meeting, the mine had not begun to yield some tangible results. (Hear, hear.)

An extraordinary general meeting was held,

Mr. BAXTER in the chair.

The CHAIRMAN said, in order to obtain the capital necessary to ensure a thorough developement of the mine, they had asked their friends to subscribe, and in the interest of the shareholders it was necessary some inducement should be held out, so as to enable them to bring the mine into a dividend-paying condition as quickly as possible. Therefore, those who subscribed for the unissued shares were given the call of a similar number at par during 12 months, but the directors had decided that the privilege should not be extended to the vendors' shares, although he (the Chairman) had purchased a large a number of those shares. Those only who subscribed for shares had this option, which the directors believed to be a most valuable and important one. The directors had made this a personal right, belonging to the subscribers and not to the shares. As apart from these reserved shares there was an ample available capital. He then proposed—

"That the several persons mentioned in the schedule hereunder written having applied for and taken the number of shares set opposite their respective names shall at any time before June 30, 1878, have the right to call for and have allotted to them respectively a similar number of the unallotted shares of the company at par on their paying, with such application, such sum per share as the directors may determine, and undertaking to repay the remaining amount on such shares as and when required by the directors. That the right to call for and have such additional allotment as aforesaid shall be a personal right belonging to each such person, and shall not be transferable either with or as attached to their other shares so taken by them respectively as aforesaid or otherwise."

Mr. HAMMOND seconded the proposition, which was put and carried unanimously.

The proceedings then terminated. The meeting represented 10,400 shares.

EAST CRAVEN MOOR LEAD COMPANY.

The first ordinary general meeting of shareholders was held at the offices, New Broad-street, on Thursday,

Mr. R. H. SILVERSIDES in the chair.

The CHAIRMAN having declared a quorum of members to be present, Mr. E. BEAZLEY (the secretary) read the notice calling the meeting.

The CHAIRMAN said that if the Act of Parliament had not made it imperative that a meeting should be held within a given time after the registration of a new company, there would have been no occasion to have brought the shareholders from their homes and businesses to-day. For some companies the holding of such a meeting might be well, but for such as this it appeared to be useless, except that it gave shareholders the opportunity of making any enquiries about their property. The prospectus that was issued was not one of those alluring baits that had been too often used to catch shareholders, but was restricted to facts, and considering the then and still depressed state of everything, with the reluctance to invest or speculate, it was a matter for congratulation that without any advertisements in newspapers no less than 1100 out of the 1200 10*l.* shares that had been offered to the public had been subscribed for. It was now proposed to hold the remaining 100 shares, with the certainty that when the present gloom had passed away those shares would command a high premium. He might observe that their near neighbour—the West Craven Moor, where the development had been going on about two years—was opening up splendidly, and there was reason to hope and confidently expect that in a short time the same might be said of this property, which appeared to have all the elements of prosperity. (Hear, hear.) He would now read the agent's report of the mine received that morning:—

August 15.—Since this company has been in possession of the mine the 56 adit level has been cleared and secured 58 fms. west of engine shaft, and driven 5 fms. upon Hardgate end vein, which at present is fully 5 ft. wide, composed chiefly of spar, barytes, and intermixed throughout with good patches of lead ore. We are now within about 5 fms. of No. 1 winze below the 42, where a good course of ore is left standing, and was given up only on account of the water. This vein has been exceedingly rich from the surface to the 42 for 220 fms. in length, and must have produced some thousands of tons of lead ore, and by driving this level further west you will drain the four winzes sunk in the bottom of the 42 (three of which are shown on the plan or section of working on this vein), which I have no doubt will lay open a considerable quantity of ore ground high and dry for stoping. From the present end a cross cut is being driven south to intersect eight or nine well known and productive veins, the first of which is Woodhouse vein, which I hope to reach in about three months hence, being one of the champion lodes in this sett, and having yielded large quantities of ore from the shallow workings from the surface. We may reasonably expect to find it very rich at this depth. —2. The south string vein, 33 fms. south of Woodhouse vein, has not been much worked upon.—3. Harrup vein, about 6 fms. south of string vein, is very rich, and abandoned owing to the water being too quick.—4. Rothwell vein, 40 fms. south of Harrup vein, is worked from the surface to a depth of from 18 to 20 fms a very promising vein in depth.—5 Storey's vein not much worked upon.—6. Lodge vein, 7 fms. south of Rothwell vein, is worked about 20 fms. below the surface, and a very good course of ore is reported to be left standing in the bottom thereof. —7. Green Bay vein has been extensively worked in the adjoining mine eastward. —8. Foxhole's veins is now rich in West Craven Moor Mine. I strongly recommend you to have a boring-machine to cross-cut the whole section of the veins already referred to. The new shaft from the surface upon Hardgate end vein to communicate with the 42 is down about 23 fms. The lode is at present 8 ft. wide, chiefly composed of limespar, barytes, and solid stones of ore from 1 to 2 cwts. each. The new discovery lode south of Hardgate end vein and west of shaft, is 3 ft. wide, and worth 18 cwts. of lead ore per fathom—a good parcel of lead ore has already been raised from this vein.—DAVID WILLIAMS.

On the motion of the CHAIRMAN the report was adopted.

Mr. N. LEAROYD then addressed the meeting, suggesting the advisability of appointing a managing director, and after some conversation it was proposed by Mr. WALTER, seconded by Mr. TALLENTIRE, and resolved—"That the directors be recommended to take into early consideration the propriety of appointing a managing director, and that if they should determine to make such appointment the shareholders would recommend for that purpose Mr. Granville Sharp, notwithstanding that he is understood to have been interested in the lease purchased by the company."

The meeting then broke up, with a vote of thanks to the Chairman.

WHEAL ELIZA CONSOLS.

The half-yearly general meeting of shareholders was held at the company's offices, Birmingham, on Aug. 10,

Mr. STEPHEN BARKER in the chair.

The usual preliminaries having been disposed of, the statement of accounts for the six months ending June was submitted. It appeared that 251 tons of black tin were sold for 10,981*l.* 5s. 10d., being an average of 43*l.* 15s. 2d. per ton. Against this the mine costs, merchants' bills, and dues were 7656*l.* 18s. 4d. A dividend of 2*l.* 10s. per share was paid in January, and another of 1*l.* in May. The profit on the six months' working amounted to 2707*l.* 3s. 6d., and the available balance on June 30 was 1579*l.* 2s. 2d. The subjoined report was also submitted:—

July 30.—During the past half year we have completed our new underlie shaft with every necessary appliance of bobs, main rods, &c., from the 30 to the 102. We have also sunk the shaft 8 fms. under the 102, and making good progress towards the 132. This present four weeks I hope to see this shaft sunk 3 fms. at the rate of 4 ft. 6 in. per week; the shaft is 12 ft. long and 6 ft. wide. The 102 east has come up to and passed through the cross-course, and as far as we can ascertain we shall have the lode equally rich east of this cross-course as usual. The various points of operation continue much the same as for some time past. We have made about 10*l.* per ton profit on every ton of tin raised, and paid for all our new machinery and other necessary outlay in connection with our new shaft. Our tin ore has cost us rarely less than 30*l.* per ton, excepting the machinery, &c., before referred to, and I think our next half year the tin will not cost us 30*l.* per ton. The mine continues to look well, and all our operations are carried out with a full knowledge of tin ore being worth a little over 40*l.* per ton, and I am pleased to say we are able to show our usual profit. Our course of proceedings will be governed by the price of tin, and such parts of the mine where the yield requires 60*l.* a ton will remain in abeyance until the day arrives that it can be taken away at a profit.—R. H. WILLIAMS, A.I.C.E.

The CHAIRMAN congratulated the meeting upon the satisfactory position of the undertaking, and remarked that it was gratifying to be able to say, in these times of excitement as to the audit of mine accounts, that they employed an independent accountant to make the audit. They carefully took stock of the ore, coals, &c., and charge up all liabilities to the day upon which the accounts are made up. They had sold an additional 21 tons of tin before the meeting took place, but as they, of course, had a cost-sheet coming on, they did not take that sale into account.

After some discussion a dividend of 2048*l.* (2*l.* per share) was unanimously declared, and the usual complimentary votes having been passed, the proceedings terminated.

WEST WHEAL ELIZA MINING COMPANY.

The half-yearly general meeting of shareholders was held at the company's offices, Birmingham, on Aug. 10,

Mr. STEPHEN BARKER in the chair.

The usual preliminaries having been disposed of, the statement of accounts for the six months ending June, showing a loss on the six months' working of 344*l.* 6s. 4d., and reducing the credit balance to 887*l.* 2s., was submitted, as was also the subjoined report:—

July 31.—Since my last report to you the various surface erections have been completed, and all our machinery placed in most perfect working order. We have a little to add to our surface tram-road to bring down the ore from the flat-rod shaft to the dressing-floors and stamps. This tram road we can complete in a very short time; this done, a small outlay will put all our dressing appliances in good order.—Underground: Our engine shaft has been completed to 16 fms. below the adit level, and we are sinking for a 32 fm. level, and have sunk 7 fms 1 ft. 7 in. below the 16 towards the 32. A good plunger-lift is set to work at the 16, and the shaft made complete for winding and pumping; I expect in about three months to see this shaft complete to the 32. At the 16 a large trip plat has been cut, and cross-cuts extended north and south. The south cross-cut has intersected the main lode, and we have driven about 3 fms. east and west; the west end is now close on some tin ground out in the engine shaft. The east end has yet some fathoms to reach the tin gone down under the adit level. The north cross-cut has intersected our north lode, and we are pressing on east to reach a long run of tin gone down under the adit level, and from which large quantities of tin have been raised for many years past. The end west on north lode has been driving in a branch of rich tin, but we have not yet opened up sufficient ground to stope. Our great points of interest are to press our south lode ends east and west to come under ground of sufficient richness to be taken away at a profit at 4*l.* a ton for tin, and as soon as we drain the lode sufficiently winzes can be put down in lodes worth 5 per cent. for tin on the south lode. We must also press our east level on the north lode to open up the tin ground gone down under the adit. A winze sinking under the adit will come down on this end in about eight weeks' time; this winze is sinking on the western extremity of our tin ground; in this winze we have a small rich vein of tin. I am using every endeavour to press our levels to the points before referred to, and when reached we shall be making regular sales of tin. Our shaft is going down in a fine channel of ground, and our prospects are such that the development of the mine, I believe, will be a success. We have about 4 tons of tin in stock at present time.—R. H. WILLIAMS.

GROGWINION LEAD MINING COMPANY.

The half-yearly ordinary general meeting of shareholders was held at the Cannon-street Hotel, on Thursday,

Mr. G. ROSS, F.G.S., in the chair.

Mr. GEORGE BEDFORD (the secretary) read the notice calling the meeting, and also the reports of the directors and auditors.

The CHAIRMAN said it was with great regret that the directors had to appear before the shareholders for the first time in the history of the company as apologists, but this was from no fault of their own. He said advisedly that it was from no fault of the board, because no foresight could have guarded against the immoral system of trading pursued by the Burry Port Company, which resulted not only in depriving the shareholders of this company of their dividends this half-year, but also the shareholders in several other companies. It was not his intention to enter into any explanation as to how that company failed, as it would not improve the position of the shareholders here, but he regretted that a bank had carried that company into a friendly liquidation, so that there would be no public statement as to the causes which led to the bankruptcy of that company. The accounts of the Grogwinion had been prepared after careful consideration by the directors, and after consultation with the solicitor and auditor, and they were satisfied that there was no other form in which they could be submitted. He was perfectly satisfied from information which had been received by the directors since the accounts were made up that at the outside not more than 1s. in 1*l.* could be expected from the Burry Port Company, and in all probability that 1s. in 1*l.* would be reduced to 4d. There was no denying that the depressed state of the lead trade was partly traceable to the failure, and the few smelters whom the company could place faith in were buying the ore on their own terms, and this, too, at a time when England was buying more lead from the foreigner than had been bought before for seven years. This question of the relative position of the buyers and sellers of lead ores deserved serious consideration at the hands of shareholders in lead mining companies, and the question was in his mind, and in the minds of his colleagues, as to how long they were to be dependent upon lead smelters for a market for their produce. In Northumberland, Cumberland, Yorkshire, Flintshire, and some other parts, the lead miners smelted their own produce, and why should not this company do the same. He recommended the shareholders to give the matter their serious consideration. (Hear, hear.) The capital and revenue accounts were in their usual form, the usual information was given therein, and no comment was required upon them. Turning to the mine itself (and the change was an agreeable one), he was happy to say that at no former period in the history of the company had the property looked better than now—whether the improvement be sought in No. 1 lode, or whether it be in the development of No. 3 lode at the deeper level, or whether it be the development of No. 4 lode, which they had reached by cross-cutting from No. 3, they all told a story of continuous improvement, and they would see the improvement through the whole of the year in the increased yield of lead. In conclusion, he (the Chairman) moved the adoption of the reports and accounts, and said he should be happy to answer any question which any shareholder might wish to put.

Mr. HORSELEY asked the solicitor why the meeting had not been held earlier?——Mr. KERLY, solicitor, said the question was not in his department, but he was told that the extra work entailed by the issue of new shares had rendered it impossible to get the accounts prepared ready for the meeting before the present time. By the Articles of Association it was really necessary to only hold a meeting in the year.

The CHAIRMAN said the meeting was only held 22 days later than last year.

Mr. HORSLEY asked why the outlay on capital account had not been larger. He asked what proportion of the 4000*l.* had been paid up, and also how it had been invested. He asked for an explanation of the two items in the accounts relative to the royalties which had been paid, and said that it seemed to him that 481*l.* had been paid as royalties, and 278*l.* was still due. He asked whether such was the case. He moved the following as an amendment to the resolution:—"That the directors' accounts being of a very unsatisfactory nature, the report received but not adopted, and that this meeting be adjourned until Oct. 1, at the same place and hour, to give time for full enquiry into the accounts presented by the directors, and especially into the affairs of the Burry Port Steam Company."

Mr. LUKE seconded the resolution, and without casting any reflection upon the directors, thought the points raised by the last speaker called for some little explanation. He thought the directors ought to have known more than they did about the affairs of the Burry Port Company.

The CHAIRMAN said the 4000*l.* was not invested, but was lying intact at the bankers, and had they not possessed it at the time the Burry Port Company failed they would have been in considerable straits, as they had one of the Burry Port bills returned from the Alliance Bank. Last half year the capital account had been rather close. They had something like 200*l.* or 300*l.*

Capt. KITTO said the reason why more had not been spent upon capital account was simply that they had not been in a position to do so. He was sure that neither Mr. Horseley nor any other shareholder would wish him to spend money when there was an object in doing so. The work which had been done during the last six months had been simply preliminary work, but he believed at the end of the next half-year the expenditure upon capital account would far exceed that of the last half year. Up to the time of the last meeting, when the fresh capital was raised, he had done nothing in the way of laying out for spending more money on capital account than they had in their possession, because he did not reckon on having money to spend which they had not secured. Since the last meeting he had worked with a view of spending that capital as economically and judiciously as he had been able, and with the view of expending it as rapidly as circumstances would permit, and as he was justified in spending it. He would not spend it unnecessarily; he was doing everything which he thought was right in the interest of the company, and he believed there was no shareholder or any other person who could find fault with what he had done. (Hear, hear.)

Mr. HORSELEY said that was very satisfactory.

Capt. KITTO said that, as regarded the broken ore, it was of the same quality and value as the other. As the works were extended, and new levels driven, new stopes opened up, the ore broken must necessarily accumulate in the workings, and every new place which was started, as there was a certain quantity of ore allowed to stand under the men's feet.

The SECRETARY said that, with respect to the capital called up in the new shares, the last call fell due a little after the time that the balance-sheet was made up. As regarded the items for royalties, the 600*l.* odd was the amount which had become due, and the smaller amount in the balance-sheet was a part of it that was not yet paid.

The AUDITOR answered one or two unimportant questions with regard to some of the smaller items in the accounts, and said the figure in the reserve fund account was a printer's error, and, of course, ought to be 1877.

The CHAIRMAN said that Mr. Horsley had criticised the conduct of the directors in not having exercised due diligence and care with respect to the Burry Port Company. He would point the attention of the shareholders to the fact that several other companies were let in the same as this company. There was really no earthly reason, as far as could be known, for this company to mistrust the Burry Port Company in the slightest degree, and from incidental enquiries which he made this view was confirmed only a few days before the failure of the company took place. There was no doubt that the Burry Port Company was bolstered up by banks in the West of England. He contended that the directors were not in any way open to the charge of not having shown due diligence and care in their dealings with the Burry Port Company. (Hear, hear.)

A desultory conversation of no public interest or importance ensued, and

Mr. MILNE remarked that he thought the accounts of the company required further investigation. With regard to the Burry Port Company, he had learned a few days before the failure that the company was in a critical condition, and was anticipated that the loss of some mines would be great.

Mr. G. F. C. SIMMONS said it was a pity Mr. Milne did not give the directors the benefit of the information which he possessed.

Mr. KERLY said that although he appeared there as solicitor he was at the same time probably the largest shareholder in the room, holding 400 shares, and he fully confirmed what the Chairman had said about the Burry Port Company. Some of the cleverest men on the mining market, and having connection with mining companies, had been deceived by the Burry Port Company, which was certainly at the time of the failure was in a most rotten state, and was bolstered up by banks in the West of England for purposes of their own. His first thought was to institute a criminal prosecution, because the state of affairs was so bad; but he thought that, on the whole, the directors were wise in not undergoing the heavy expense which such a course would have entailed. He maintained that by the special resolution which was passed the directors were fully entitled to their remuneration which they had taken. He hoped the Chairman would not abandon the idea of half-yearly meetings, because it gave shareholders an opportunity of asking questions and gaining information. He had looked into the accounts, and was perfectly satisfied with them, and was certain no good could be done by adjourning the meeting. As to the calling up of the money on the new shares, the directors were quite right in not calling it up until it was wanted.

Mr. MILNE said that after the explanation which had been given he should decline to vote in favour of the amendment.

The amendment was then put and lost, only the mover and seconder voting in favour of it.

The original resolution, which had been seconded by Mr. KERLY, was then carried.

On the motion of the CHAIRMAN, seconded by Mr. SIMMONS, the following resolution was put and carried without comment:—"That the directors be at liberty to borrow from the reserve fund the sum of 1500*l.* upon interest at the rate of 6 per cent. per annum, to be used as working or floating capital to save allowing discount upon ore bills taken by the company, and upon advances by the bankers and otherwise for the general purposes for which working or floating capital is required."

Capt. KITTO then made a general statement as to the mine, and said that the reserves were not diminished. He did not think, with the exception of the

was in the whole district a mine having such reserves as this had. He had only this was a lasting property. The deep adit level was opening up much better than he could have expected. So far the deepest level was comparatively poor compared with the levels above, but now he was happy to say that the deepest level, and the 80, were the two best levels in the mine. This went to show that the breadth of ore they had been working upon above was carrying down, and from the present appearance in the deep adit he could not see where it would end.

A vote of thanks was then passed to the Chairman and directors on the motion of Mr. Brooks, and the meeting broke up.

ENGLISH AND AUSTRALIAN COPPER COMPANY.

The meeting of shareholders will be held on Thursday, when the following report from the directors will be presented:—

During the six months ending Dec. 31 the gross quantity of ore, regulus, precipitate, and rough copper received from various mines was 7615 tons 18 cwts. 2qrs., against 7642 tons 11 cwts. 1 qr. for the corresponding six months of the previous year. The quantity of ore, regulus, and precipitate smelted at Port Adelaide and Burra Burra Works was 4904 tons 5 cwts. 1 qr., as against 6758 tons 9 cwts. 1 qr. The quantity of copper made was 1183 tons 4 cwts. 2 qrs. 17 lbs., as against 1384 tons 9 cwts. 2 qrs. 26 lbs.; and the quantity of copper shipped from and sold in England was 1171 tons 11 cwts. 2qrs. 27lbs., as against 1384 tons 8 cwts. 1 qr. 19lbs. The net earnings of the company's wharf at Port Adelaide were 1788*l.* 8s. 11d., as against 2607*l.* 8s. 3d. When the accounts for the year ending June 30, 1876, were made up, the price of Burra Burra copper was 84*l.* to 85*l.* per ton. At the general meeting, held on Feb. 22, the Chairman drew attention to the fall that had then taken place from 84*l.* to 77*l.* 10s. per ton; and by March there had been a further reduction to 76*l.* per ton, at which price it continues to the present time. This fall of about 10*l.* per ton affected the value of the stock on hand on June 30, 1876, to the extent of 7279*l.* 1s. 7d., and it has also had an adverse effect on the succeeding six months' operations to Dec. 31, 1876. The earnings of the wharf at Port Adelaide show a falling off of 748*l.* 16s. 4d., as compared with the corresponding year. This result has arisen from the necessity for repairing the old portion of the wharf, which had been erected nearly 26 years, and which had become unsafe for the heavy traffic brought to bear upon it. The whole has now been completed, and by recent advices a full business was being done. The statement of the Adelaide Smelting Co. with the company to Dec. 31, 1876, shows an estimated deficiency of 7059*l.* 10s. 9d.; and this sum, being to be deducted the balance on June 30, 1876, leaving a deficiency of 4780*l.* 13s. 2d. The reserve fund stands at 11,450*l.* 12s. 2d.

CWM-Y-MWYN.—In anticipation of the meeting to be held at Swansea on Aug. 30 the report of the managing director (Mr. W. Trounce) has been printed. He states that since he made his report some months ago there has been a marked improvement in every part of the mine. They have continued to develope the Modlyn lode from Griffiths' shaft by sinking it 20 yards deeper, making 130 from the adit. For the last 10 yards good stones of lead ore have been regularly obtained, the best portion being at the bottom, where the runs come into the shaft in succession, giving further encouragement to continue sinking it. Levels have been driven east and west, at 20 yards below the adit or day level, and some runs of ore intersected. The produce of the mine has gradually improved; but with difficulty the output was 6 tons per month nine months ago, now 18 tons are regularly brought to bank, and a prospect of being doubled or trebled as the ground is opened for the men to work. They have dispensed with the old horse whim for winding; a steam winch, with double wire rope, has been obtained and fixed, with new head-gear, so as to meet the greater amount of work required to be done. A powerful steam-winch and boiler are being fixed on the Modlyn shaft, and the money to that being sunk and developed, the success attending the Griffiths' shaft having given encouragement for so doing. Stabling and sheds for carts, trucks, &c., have been erected, also an office on the land acquired, which will prove useful in the extension of the works. All the machinery for pumping, &c., is in good order, and is sufficient for some time to come, with the exception of the dressing floors, for which some new machinery is in progress, and expected to be put in a few weeks.

GREAT MOOR.—At the meeting, on Aug. 9 (Mr. E. Trythall in the chair), the 26 shares relinquished since previous meeting, and previously relinquished, were merged, and the number thus reduced to 385, upon which a call of 1*l.* per share was made. The meeting being then made special, to consider the propriety of further working the mine or otherwise, it was resolved that in consequence of the falling off in the produce of the mine, the present state of its prospects, and the very low price of tin, the mine be offered for sale as a going concern; in case it should not sold as a going concern, that the materials be offered to the lords, and in the event of the mine not being taken by the lords, the materials be drawn into lots and disposed of by private contract or public auction, and the affairs be wound up. To show the high opinion in which this mine has been estimated, it was stated that about three-quarters of the shares have been held locally; that it had been in a good locality, has been worked under the present company and management, or nearly so, since 1840, and is surrounded by and adjoining mines, viz., Gunyorth, Levant, and North Levant Mines; and although recently a loser, it has at times paid dividends, at other times was self-paying, and at other times required calls. With tin at 59*l.* per ton, the average price of all sold from the mine, amounting to over 2000 tons, or about 55 tons a-year, extending over 37 years, the mines might have continued working for many years more, and would have been more extensively developed, with probably continuous profitable returns; but the present very low price of 84*l.* 8s. per ton, and the present aspect of the market, leaves no alternative but to wind-up the affairs.

[For remainder of Meetings see to-day's Journal.]

Registration of New Companies.

The following joint-stock companies have been duly registered:—

ANGLO-AUSTRALIAN GOLD MINING COMPANY (Limited).—Capital 20,000*l.*, in 1*l.* shares. To purchase the leasehold mine and property of the Anglo-Australian Gold Mining Company (Limited), together with all the plant, &c., agreed to be paid to the liquidator of the old company being 1600*l.* in cash and 18,400 fully paid up shares of 1*l.* each in the new company. The subscribers (who take one share each) are—E. W. Wingrove, Southend House, Twickenham, no occupation; J. J. Pyne, 6, Bishopsgate-street, sharebroker; R. P. D. Monypenny, 73, Grand Gardens, barrister; J. H. Murchison, 8, Austinfriars, mining engineer; H. Williamson, 4, Stone Buildings, Lincoln's Inn; Peter Watson, Old Broad-street, sharebroker. The directors are—Messrs. E. W. Wingrove, S. W. Dawkes, R. D. Monypenny, J. W. Williamson, H. J. J. Sharp, and H. W. Lamb. The company is entitled to put aside for the remuneration of the directors 10 per cent. of the profits made by the company.

CWM HOLWAY LEAD COMPANY (Limited). — Capital 60,000*l.*, in 5*l.* shares. To acquire mineral property in the parishes of Holywell and Whitford, and also to acquire the goodwill and business of any similar company, &c. The subscribers are—R. Chandler, Bishopsgate street, solicitor; E. Beazley, 9D, New Broad-street, secretary, 5; W. Marlborough, 29, Bishopsgate-street, stock and share dealer, 5; F. T. Gamble, Ealing, no occupation, 5*l.*; A. H. Cooper, 19, Coleman-street, 5; S. Eastes, 17, Water-lane, 20; J. W. Worfolk, Ashby-road, Hastings, 5; and E. Hill, 5. The company will carry out an agreement made between W. Trounce of the one part and E. J. Bartlett on behalf of the company. The qualification for a director is the holding of 100 shares.

THE VICTORIA SALT COMPANY (Limited) —Capital 54,000*l.*, in 12*l.* shares. To purchase salt works in the parish of Winchern, Chester, and to take over the whole or part of the premises, goodwill, &c., of the Bridgefield and Victoria Salt Works (Limited). The subscribers (who take one share each) are—Charles Barber, 20, Winchester-street; W. Horne, Bay Bank, Herne Hill; James Bowden, 3, Mary-cod, Canonbury; T. Cooper, 14, George-street, Mansion House; Thomas Cooper, 14, George-street; E. H. Fletcher, 14, George-street; John Osmaston, Osmaston Manor, near Derby.

THE ARGENTINE MEAT IMPORTERS COMPANY (Limited).—Capital 100,000*l.*, in 10*l.* shares. To acquire land in Texas, and to carry on business as cattle breeders, importers, &c. The subscribers (who take one share each) are—Lord Richard Grosvenor, Belgrave; E. L. Mills, 8, Queen street-place; C. E. Grissell, 36, Curzon-street, Mayfair; J. T. Campbell, 17, Warwick-street, Regent's-street; H. E. Fenton, 11, Warwick-street; John Honck, Stonebridge, Tottenham; J. S. M. Anderson, 15, Weymouth-street.

THE STONE LINOLEUM COMPANY (Limited).—Capital 25,000*l.*, in 10*l.* shares. To carry on business as linoleum manufacturers. The subscribers are—Thomas Hall, the Hope Brewery, Addlestone; J. C. Chandler, Cherry Orchard Grove, Croydon; W. D. Butcher, Sewardstone, Essex, 20; G. Moresby-whole, 6, Oberland-road, New Wandsworth, 1; P. Woodford, Wharton-street, Lloyd's square, 1; Thomas Allin, 9, Northumberland terrace, Regent's Park, 1; H. G. Trench, 4, Stratford Park, Camberwell, 1.

THE UNION LAND AND BUILDING COMPANY (Limited).—Capital 25,000*l.*, in 10*l.* shares. To take over the business of the Union Land and Building Company (Limited). The subscribers are—H. Whiley, Manchester, 40; W. W. Dawson, Market-street, Manchester, 12; S. Massey, Town Hall, Manchester, 40; J. Hardman, Manchester, 20; Joseph Smith, Manchester, 2; W. Appleby, 15, Balloon-street, Manchester, 2; W. Bates, Green-street, Patricroft, 5.

THE CENTRAL SALTS PRODUCTION AND MOORLANDS RECLAMATION COMPANY (Limited).—Capital 450,0 0*l.*, in 10*l.* shares. To carry into effect an agreement made between the Continental Diamond Rock Boring Company (Limited) and P. A. Scratchley on behalf of the company, for the purchase of certain concessions granted by the Prussian Government to the Continental Diamond Rock Boring Company (Limited) for the sole right of working mines upon lands at Schoenebeck, in Northern Germany. The subscribers are—Lyon Playfair, 58, Onslow-gardens, 100; F. J. Bolton, 19, Grosvenor-gardens, Lt. Col., 2 0; Sir Lowe, C.E., Onslow-gardens; H. B. Muir, 26, Old Broad-street, merchant, M. E. Grant Duff, M.P., Twickenham, 500; J. F. Woody, J.P., Tamworth, T. B. Corbett, Knowle House, Norwood, 100. The directors are the Right Hon. Lyon Playfair, M.P.; Lt.-Col. Bolton, M.E.; Grant Duff, M.P.; H. W. Lowe, M.P.; John Hicks, M.P.; H. B. Muir, H Schmidtthman, E. Woods, and Henry Jan, the qualification being the holding of 500 shares. The offices of the company are at 4, Broad Sanctuary, S.W., and Wintergarten Strasse, Leipzic.

THE LEWIS'S WEST COMPANY (Limited).—Capital 20,000*l.*, in 10*l.* shares. To acquire the freehold coal and timber lands belonging to the Gawley Kanawha Coal Company (Limited) situate in Fayette county, West Virginia, also all the estate and interest of the Gawley-Kanawha Coal Company in the railway connected with the property with the Chesapeake and Ohio Railway, according to an agreement made between W. G. Goodliffe and Adam Stewart, the liquidators, by the Gawley Company. The subscribers are—Sir Robert Hay, Heyston, Peebles, N.B., 250; Thomas Bigge, Esq., Esden, Newcastle, engineer, 100; H. G. Houghton, M.D., 6, Mount-street, Grosvenor-square, 35; G. Wilmshurst, 10, Grosvenor Mansions, esquire, 30; Thomas Dickinson, 17, Queen Victoria-street, merchant; G. F. Dickinson, 17, Queen Victoria-street, merchant, 30; J. N. Trouncer, Surbiton, M.D.; D. E. Letchworth, 19 and 21

placed either outside or inside of the house, and being alway empty nothing offensive can enter any of the rooms. The apparatus has been fixed in several places near Stirling, and is well worthy of inspection.

FOREIGN MINES.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices received Aug. 1, 1877, ex Minho (s.), dated Morro Velho, July 2:—

GOLD EXTRACTED TO DATE.—The produce extracted during the second division of June, a period of 11 days, has amounted to 12,884·4 oits.=1485·3615 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
From general mineral	5,283·0	from	944 =	5·596
Mineral roughly freed from killas	6,138·0	,,	692 =	8·869
Cotesworth mineral	376·5	,,	130 =	2·896
	11,797·5	,,	1766 =	6·680
Praia, re-treatment, &c.	1086·9	,,	— =	·614
Total	12,884·4	,,	1766 =	7·294

Equal to ..... 1485·3615 ozs. troy=·8418 oz. troy per ton.

Advices received Aug. 14, 1877, ex Tagus (s.), dated Morro Velho, July 18:—

GENERAL OPERATIONS.—There have been no interruptions worthy of note during the past month's operations. The borer force has been fairly adequate, and the supply of water fairly up to our requirements. There has been a slight increase in the quantity of mineral stamped, though the average produce per ton is lower, the extraction of better stone from the stopes west from sump being interrupted by the extension of the A shoot 60 ft., which is now completed, and in good working order. A great quantity of large and small timber has been placed in the mine, and the walls and hauling ways may be said to be fairly secure.

GOLD PRODUCE FOR THE MONTH OF JUNE.—The produce extracted during the month of June amounts to 36,211·4 oits., or 4174·5853 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
From general mineral	14,450·0	from	2728 =	5·296
Mineral free from killas	17,723·6	,,	1960 =	9·042
Cotesworth mineral	1,301·0	,,	367 =	3·544
	33,474·6	,,	5055 =	6·622
Re-treatment and Praia	2,736·8	,,	— =	·854
Total	36,211·4	,,	5055 =	7·476

The return for the month, though considerably under that for May, is favourable, considering the low produce of the mineral treated, the "general body" falling short by ·882 oit. per ton, and "mineral freed from killas" 1·026 oit.

During the next month, now that the A shoot is finished, and the work for the lowering of the B kibble to section 256 B nearly completed, a better class of stone will be available.

COST AND PROFIT.

The produce for June being	36,211·4 oits.		
Deduct loss melting into bars.....	247·6 ,,		
	35,963·8, at 7s. 9d. per oit. =	£13,935	19 4¼
Cost		7,001	17 4¼
Profit for the month of June.....		£ 6,934	2 0

MINE DEPARTMENT.

Mineral delivered on spalling floors.....	6576 wagons.
Average number of natives daily	193·76
Average number of borers daily.....	126·88
Mineral quarried per borer	2·07 wagons.

The small duty per borer is due to a large amount of mineral it was necessary to remove in section 256 B from the face of the stopes, together with part of the killas on the south wall, consequent on the lowering of the B kibble. The non-completion of the hauling arrangements at this point has prevented the raising of this mineral to surface.

LODE IN THE SUMP.—There is no change to note in the general character of the mineral body at this point; the quantity quarried being small, owing to the stoppages necessary for the placing of A shoot. Measures are now in hand to construct a sollar above the sump, and the placing of a drum roller, so as to better facilitate the deepening of the sump, and with it an increased depth of stoping area west from same. Against the south wall some 2 ft. of good mineral has been left for the better protection of the men until the required timberwork is complete, when stoping will be resumed, as well as on the good mineral available in section 258 D, &c.

STOPES WEST FROM SUMP.—The 258 C fairly maintains its size and quality, its width of 41 ft. being nearly pure pyritic mineral.

267 D: There has been a slight falling off in the improvement referred to in last report, the expected extension of the mineral body easterly and southerly being much disordered by strong leaders of white compact quartz, similar in character to the large body of quartz west of the tooth.

256 B: The stoping operations have been confined to the removal of poor killas on the south wall or line of extension of B kibble. The lode against the north wall, as before stated, is of good quality.

From the other stopes in B section a fair average amount of mineral has been quarried, with no alteration to note in their general appearance.

216 D: The quality and quantity of mineral from this section is below the average, owing to the want of a lower sollar, where the body of mineral is of larger dimensions and easier of extraction.

EASTERLY AND WESTERLY LEVEL EXTENSIONS.—Owing to the slow advance, consequent on the hard nature of the rock, there are no changes worthy of mention.

At an early date it is intended to place the McKean drill to work in the western driving.

A sub-division of the mine map sections has been made, to more clearly indicate the several points of operations.

REDUCTION DEPARTMENT.—The necessary excavation of earthwork for the new stamps is being rapidly pushed forward. A large Mexican arrastra, intended for direct amalgamation of both concentrated rich and waste sand, is nearly completed. For a better recovery of the gold from the rich pyrites treated at Herring's and Addison's, the head skins are being washed more frequently. The stamping mills at the Praia are being put into repair for a more extensive treatment of the large body of sand now accumulated.

GOLD EXTRACTED TO DATE.—The produce extracted during the first division of July, a period of nine days, has amounted to 9736·0 oits., or 1122·4 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	3744·5	from	782 =	4·788
Mineral free from killas	4833·0	,,	515 =	9·384
Cotesworth mineral	357·9	,,	138 =	2·593
	8935·4	,,	1435 =	6·226
Re-treatment and Praia	800·6	,,	— =	·557
Total	9736·0	,,	1435 =	6·783

Equal to 1122·4023 ozs. troy.

In the above division a very small proportion of the better class of mineral now available has been brought to surface.

The mine returns for the first fortnight of July embrace a period of 13 days:—

Average attendance of natives daily.....	205·92
Average attendance of borers daily.....	134·61
Stone delivered on spalling floors	3365 wagons.

Duty per borer, 24·15, or 1·85 wagon per borer daily.

The above duty is small as already explained. With the three level extensions a proportionate falling off will continue, owing to the lesser duty of the holes blasted compared to the stopes.

The work generally throughout the establishment is going on satisfactorily; a slight increase to the borer force has been obtained.

MINE.—The contraction, previously reported, of the mineral body in the level above sump is more favourable—a portion of the body of killas dividing the good mineral giving way to leaders of pyrites.

The following telegrams have been received:—

On July 20,—"Produce 9 days, first division of July, 9500 oits.; yield, 8·7 oits. per ton. Produce small from work going on, which interferes with working best stopes."

On July 24—"Yield 7·3 oitavas per ton. Profit for the month (June), 6900*l*. General work in mine and on surface going on well, and satisfactory duty being performed."

On July 31—"Produce 11 days (second division of July), 15,250 oitavas; yield, 8·2 oitavas per ton."

On August 13—"Produce for month (July), 42,000 oitavas; yield, 8·3 oitavas per ton. General work in mine and on surface going on satisfactorily."

DON PEDRO NORTH DEL REY.—Report for June: Produce from 2141·50 tons, dry weight, 7100 oits. = 3017*l*. 10s.; cost, including all general expedses, outlay on viaduct from adit to reduction works; also cost of labour and materials, amounting to 118*l*. 19s. 11d., for erection of permanent pumping machinery, 2302*l*. 6s. 8d.—Capt. Vivian (July 18) reports—Produce: Weighed to date, 2516 oits.—Mine: As regards the state of the different points in operation at Maquiné, I cannot but confirm my former statements, and particularly my last of July 10. In a telegram received on July 24 the profit for June was, through an error in the transmission of the message, advised as 450*l*. instead of 700*l*. Telegram from Rio, dated Aug. 9, referring to a later date than the above report, advised 5100 oits. for the month of July.

JAVALI.—The company's manager (July 6) reports that the mill working 19 days crushed 1350 tons of quartz, yielding 373¾ ozs. of gold. The remittance is valued at 946*l*.; the expenditure (including 131*l*. on capital account) had been 946*l*. The wet season had just set in, and Capt. Sohns would remain at the mines for another month, in order to see to the correct working of the tailing mill.

SAN PEDRO.—J. Phillips, July 1: The cross-cut in the 165 has since last report been driven about 3 metres into the manto, and I am sorry to state that it has thus far proved unproductive; however, the ground is of a very kindly nature, composed of soft white granite, quartz, and small quantities of rich yellow bronze, but as yet not in sufficient quantities to value. The manto has a much better appearance than in the level above, and the ore that it contains is of a much richer quality, being almost free from mundic, and I hope and expect when we get a little further into the manto we shall meet with a good bunch of ore. We are still driving by four men, at $20 per metre. The coming water is not so much as when last reported; it is now about 4000 gallons per day. The winze sinking in the bottom of the 150 is much the same as when last reported, still producing stones of ore, but not sufficient to value; this is now down 12·40 metres; below this level we are now sinking with three men, at $20 per metre. I expect we shall communicate with the cross-cut in the 165 in about two months. It was impossible to sink this before the manto was drained; we have hitherto been following the water down, but now that the manto is comparatively drained we shall be able to get on faster. The cross cut driving towards the manto Verde is without change, still hard; we are driving here by one man, at $22 per metre. In the 165 the cross-cut is in from the shaft 24·10 metres. The stope in the back of the 135 is suspended at present, as it has become too poor to work on account of the mine, but I expect to be able to set it on tribute in a few days. The tribute pitches in the 88 and 47 are producing small quantities of ore, which leave a profit to the mine and the tributers.—Old Works: The stope in the side of the works, a few metres from surface, is much the same as when last reported, yielding 2¾ tons of 20 per cent. ore per fathom; but I do not think it will last much longer, as it is becoming very narrow. The tribute pitch in the manto Verde is suspended, as it has become less productive than when last reported. Everything at surface and underground is working in a satisfactory manner.

RICHMOND CONSOLIDATED.—Telegram: Decision to be rendered next Monday. Ore body between compromise line and fourth level looking well. Will probably justify starting furnaces Sept. 1.

CHONTALES CONSOLIDATED.—Mr. White (July 5) reports having arrived at the mines on June 24. So far as he had been able to form an opinion from the short time between his arrival and the departure of the mail he considers the extensive property belonging to the company a good one, but depending for its success on development in depth. The gold remitted by this mail, is valued at 300*l*., of which 200*l*. is from crushed ore and 100*l*. from old copper plates. In addition to this, gold has been sold in the country amounting to 47*l*. 8s., but the complete accounts for the month have not come forward.

LONDON AND CALIFORNIA.—The result of the working at the Original Amador Mine for the month of July is estimated at $9500.

SIERRA BUTTES.—Result of the working at the Sierra Buttes and Plumas Eureka Mines for July:—Sierra Buttes: Receipts, $29,079; total California expenses, including cost of mining and milling, $20,420.—Plumas Eureka: Receipts (including sulphurets), $36,733; total California expenses, including cost of mining and milling, $17,075.

I.X.L. (Gold and Silver).—Lewis Chalmers, July 23: I send herewith foreman's report, from which you will see we are making better headway since we commenced working by the day, after the throwing up of the contract, which left us no other alternative. I am still pushing the 200 north. The influx of water betokens the possibility of getting into an ore body ere long. A little ahead of the face of the present drift, 200 ft. above us, in the old workings, rich ore was taken out.—Foreman's Report: The engine-shaft is now down 77 ft. from the 200 station—10 ft. sunk this week; the said drift is in hard rock in the bottom; some small streaks of quartz are coming in, and it is making good headway, considering the rock the miners have to contend with; it is well timbered to near the bottom—4 ft. apart each set, plumb and level. The north drift (or 200 ft. level) is now in 575 ft. from cross-cut; 10 ft. driven this week is in ledge matter and ore 5 ft. thick. Only three miners at work in this drift. A strong flow of water from the face—all coming through the ledge, which indicates a body of ore not far ahead. Everything is running and working well.

SANTA BARBARA.—Mr. Hilcke (Pari, July 12) reports: During June 1002 tons of mineral were stamped, yielding 3·571 oits. per ton, or a total of 3578 oits. of gold, which, valued at 8s. 6d. per oit., amounts to 1520*l*. 13s. as the estimated value of the produce for the month of June. The cost for the same period was, at Exchange 23¾d., 1068*l*. 16s. 5d., thus leaving an estimated profit of 451*l*. 16s. 7d. for for June. The yield of the ore per ton was a little less than in May, owing to some soft killas in the hanging wall at No. 4 stope south of No. 2 shaft, which had to be taken down, and got mixed with the smalls of the good stone, with which it was stamped. The Mine Captain reports as follows:—Mine: Stope No. 3, and Adit Level: The lode in the upper part of this stope has become small and poor, and very spare for quarrying. In the adit level the lode is 6 ft. wide, of fair quality, and looking well going down.—Stope No. 4, South of No. 2 Shaft: The lode in this stope is about 9 ft. wide at the bottom and 4 ft. wide at the top, producing fair quality mineral. The hanging-wall has been rather soft and jointy, and we have had to take away some soft killas, and put in a good many pieces for supporting the wall. For the hauling machine the excavation for the horse-whim has been finished, hitches and headways cut, and two upright pieces of timber put in and pegged for carrying the span beam of the whim, two stull pieces taken out of the stull between the whim and shaft, for the wire-rope to pass, and two pieces of timber taken out, and several holes blasted to make room for the landing platform. The quantity of ore raised during the month amounted to 1236 tons, of which 234 were rejected as refuse stone, and 1002 tons treated at the stamps. Average quantity of ore per borer for the month 26·5 tons.

NEW ZEALAND KAPANGA.—J. Thomas, June 30: Since my last advices I beg to give you the following details of our several operations:—Crushing: We have finished crushing 125 tons of quartz, with 68 lbs. of specimens, which have produced conjointly 130 ozs. 3 dwts. 18 grs. of melted gold, worth 2*l*. 16s. 5d. per oz., averaging 1 oz 19 grs. per ton.—Underground: The 60 during the month I discontinued driving south, and put the men to open the lode in the back of this level, in order to facilitate the ground opened to be stoped away with speed; the lode is 18 in. to 2 ft. wide, and yields from 3 to 4 tons of quartz per fathom, with occasional rich specimens. After laying open the back I put the men to cut a plat to resume the sinking of the sump winze on the course of the lode under this level with all speed; the plat is finished, and the sinking will be commenced on the 2nd proximo. The south stope above this level has been further stoped away south of the sump winze 6 fms. long and 2 fms. high; the lode here is of the same class and character as above described, and yielding about the same. In the north stope above this level about the middle of the month I put a pare of men to open up the ground north of the sump winze; they have stoped the lode 3 fms. long and 2 fms. high. At present the lode is small here, little being yet done; I have nothing particular to report. The 50 is further driven north on the course of the lode towards the Albion ground 3 fms. 2 ft.; the distance driven from sump winze is 44 fms.—the ground has become much better for driving, and has changed very favourably in character. The lode has become regular, and of the same kindly nature as it is about the sump winze, showing we are through the hard blank belt of ground existing between the two shoots of gold-bearing ground, and also that we are approaching the auriferous section of the Albion shoot: the lode is 18 in. wide, carrying a tough seam of black flookan and ruby quartz, with every indication for gold. In the machinery department the new pinion wheel driving the stamps is fixed in position, and is now working well. The winding and pumping engines are in first-class order, and the underground water-wheel is pumping and winding from the sump winze below the 50 fm. level without any expense or repairs.—Remarks: Hitherto we have been hauling the underground stuff to surface by kibbles. Now several sections of the mine are being opened and stoped out, it has become necessary to put cages in the shaft to lift the loaded trucks to surface. This work is now completed; a truck holding ½ ton of stuff may be filled as it is broken from any part of the mine, and emptied at surface at the stamps or dumps without waste or further handling.—Labour Employed: The number of hands at present employed are—Underground, 22; landers, 2; enginemen, 5; smith and assistant, 2; carpenter, 1; sawyers, 2; stamps, 5; surface, 2; underground agent, 1; manager, 1.—Total, 43.

BENSBERG.—C. Craze, Aug. 13: Victoria shaft is being sunk with fair speed; the lode here is not producing quite so much lead as it did, but it has a kindly appearance, which leads me to hope for an improvement again soon. In the 22 west we have a good orey lode, but the ground is hard and spare for progress. There is no change in the 22 east since my last; the same remark will apply to all other points. We have now finished repairing our old boiler, and set it to work whilst the new one is being cleaned.

ARGENTINE.—Capt. Coward, June 25: Mines: All points are without change to notice except in the Pique underlie shaft sinking below the 44, where, from the presence of all the water in the shaft coming out of a flow on the western side near the bottom, there are strong indications of a part of the lode standing in that direction. Thinking the proving of this to be important, I have suspended sinking for the time, and put the shaftmen cross-cutting west from the bottom of the shaft.—Available supply of ores for Reduction Works: The lode in the bottom of the 44, north of Pique, shows no signs of falling off in quantity nor quality. The 44 north is pushed with all vigour to reach the Cano Larzo. The 20 cross-cut from the shaft (Captain section) is being pushed in like manner, so as to make the ore at these points available at the earliest possible date. But all the other points stopped should be resumed, and other places set to work, so as to always have a reserve of ore broken and at surface. There is no lack of ore discovered in the mines, but as I have informed you before, taking into consideration the fluctuating and uncertain character of the ore ground, there should be a large number of points working at the same time, so that a regular supply of ore could be ensured.

CAPE COPPER.—Capt. Tonkin, June 30: Ookiep: The shaft below the 80 continues very difficult to sink, but there is no particular change in the nature of the ground, excepting that it shows some spots of copper ore. The new shaft from surface has now reached a depth of about 11½ fms., and the last 9 ft. of the sinking has produced some fine lumps of rich copper ore. In the present bottom of the shaft there is a vein about 12 in. wide, which runs north and south, and yields good stones of ore, but I am not yet prepared to say whether any importance can be attached to this discovery or not. The 80 east from No. 19 winze has been driven through ground of a very changeable nature. At one time during the month the end looked very well, being worth 5½ tons of rich copper ore per fm.; but since then it has fallen off, and its present value is 3¼ tons per fathom. In bottom of this driving there is a good bunch of high quality ore, while the upper part is unproductive. The stopes in the 80 have yielded well, and the high quality ores taken from these places have helped very much to keep up the percentages of the monthly returns. The 68 east from No. 13 winze is being driven through ground that produces good stones of copper ore, but the yield is not enough to value. The stope in bottom of the 68 at No. 16 winze continues to hold good in depth, and we are taking a considerable quantity of rich ore from this working. The 58 east from No. 20 winze shows a few spots of copper pyrites, but the general nature of the ground is unpromising. The 48 east from No. 14 winze has not changed since last report. There is an improvement in No. 22 winze below the 68; the sinking will at present yield 1½ ton of ore per fathom. The stopes throughout the mine (not particularised in this report) have, on the whole, yielded remarkably well. Our dressing operations have been carried on regularly, with a full supply of labourers.

SPECTAKEL.—Capt. Tonkin, Capt. Ninnis, June 25: The stope in the 46 has not shown any favourable changes for some time past, and we intend shortly to suspend the workings at this point, in order to carry on the explorations in the bottom, as indicated in former reports. The 36 east towards flookan course has not revealed any ground that can be stoped away at a profit. The present end of the driving produces a little copper ore, but not enough to value. The shaft under old workings, and south-west of incline, is in hard and poor ground, consequently our progress in sinking is very slow.

TRIAL MINES.—Capt. Tonkin, Capt. Lanksbury, June 15: The 20 fm. level east at Karoluaberg is in poor and unpromising ground, therefore the driving is suspended. We have started a cross-cut north from side of the above-named level, in order to prove whether or not there are other veins in the immediate vicinity. The 20 west has improved of late, and the end is at present yielding some good stones of copper pyrites. The shaft below the 17 at Nababeep has nearly reached the required depth for driving. We shall shortly push out from bottom of shaft to prove whether the ore continues in depth or otherwise. The 17 east from old shaft has not changed since last reported. At Narrap the 20 east yields a little more copper ore than usual, still the chief produce is magnetic pyrites. We are driving a level from bottom of the trial shaft west of Ookiep, and the end is spotted throughout with yellow and purple copper ore, but there is nothing to value. At Long Kloof we have carried out trials on three copper indications, but in no place could we trace the ore in depth; therefore we have suspended all operations in that locality.

RETURNS FOR JUNE.—Ookiep, 950 tons of 32 per cent.; Spectakel, 23 tons of 25 per cent.—Bills of Lading Received: 80 tons of ore, per Nyanza; 160 tons, per Courland (s.); 380 tons, per Marion; and 450 tons per Star of the Isle.—Arrival at Port Nolloth: The Antonio Vinent and the Tacna.—Arrivals at Swansea: The Countess and Selina.

LUSITANIAN.—August 7: Palhal: The lode in Taylor's engine-shaft, sinking below the 200, is worth 4 tons of copper ore per fathom for the length of shaft:—15 ft. In the 50 cross-cut, north of Perez' shaft, the ground is still hard, and no more lode has been met with. In winze No. 108, below the 150, west of the slide, the lode is small and unproductive. Winze No. 106, below the 28, east of River shaft, is suspended; the lode is small. A stope in the bottom of the 28, west of this winze, is yielding 1 ton of ore per fathom. The lode in winze No. 107, below the 180, west of Taylor's and west of the slide, which is being sunk on the south part, is worth ½ ton of ore per fathom.—Levels on Basto's Lode: In the 200, west of Taylor's, the lode is worth 2 tons of ore per fathom. The lode in the same level west contains stones of ore. The lode in the 190 west is worth nearly 2 tons of ore per fathom. In the 180 west, on the north part, the lode does not make any regularity. In the 160 west the lode is in small strings and suspended. The lode in the 150, west of the slide, is composed of quartz and country. lode in the 90, east of River shaft, is 4 ft. wide, composed of quartz, flookan spots of lead. In the 70, east of River shaft, the lode is 2 ft. wide, of country flookan spotted with lead, and in the 50 the lode is 4 ft. wide, composed of and country.—Carvalhal: The driving of the 60, west of the cross-cut, incline-shaft, is suspended for the time. The lode in the 30, north of the lode, is 1 ft. wide, composed of quartz, mundic, and good stones of blende.

BRITTANY MINERALS.—John Edwards, Aug. 11: There is no change worth of remark in the sump sinking below the 70 since last report; ground sunk the past week 2 ft. The lode in the 70 end driving south from sump shaft looking quite so well as last reported on, now worth from 15*l*. to 20*l*. per for silver-lead ore. The ground here is still favourable for progress; driven during the past week 6 ft. The lode in the rise in the back of the 15 in. wide, worth 10*l*. per fathom for its length 12 ft. The lode in the the back of the 70, about 3 fms. behind the present end, is worth fully fathom for lead ore. We shall commence another stope here in the back of level in a short time. All the machinery is in good order, and working well. raised since last report 10 tons.

LINARES.—Pozo Ancho: The lode in the 120, east of San Tomas engine-is large and strong, but does not contain any ore. The 100, east of Warne's is producing ¾ ton of ore per fathom. The same level west has declined in during the past fortnight. The 120 cross-cut, south of Peill's, is in hard gr The 105, west of Peill's shaft, has improved to 2 tons of ore per fathom. T west of this shaft, is also worth 2 tons per fathom. The 65, being driven i same direction, is without anything to value. The 105, east of Peill's, is driving, and the lode yields 2 tons per fathom. In the 90, east of San Fra shaft, the lode is compact and regular, and produces 1 ton of ore per fathom, tinues without any improvement. San Tomas engine shaft, sinking below the 120, is in hard ground. The lode in Warne's shaft, sinking below the 100, is and strong, and yields 2 tons of ore per fathom. No. 221 winze, below the being sunk in a lode worth 2 tons per fathom. The tribute departments very well in the past month, and they are now without any change worth notice. The surface works are being carried on with their usual regularity, the machinery is in good working order. We estimate the raisings for at 200 tons.

Quinientos: Satisfactory progress is being made in the 100 cross-cut, Taylor's engine-shaft, considering the hardness of the rock. The lode in west of Taylor's shaft, continues hard and poor. In the 80, west of this the lode is regular, but of no value at present. The 90, east of Taylor opened a piece of ground in the past month worth 2 tons of ore per fa The 80, east of Addis's, contains spots of ore, but nothing to value. A good of ground has been driven through in the past month in the 80, west Carlos shaft, but unfortunately the lode is poor. The 80 east is without im ment. The lode in the 65, east of Judd's shaft, is small and poor. In the same direction, the lode is disordered and unproductive. The lode in winze, below the 80, consists of carbonate of lime and quartz. Facundo below the 65, yields a little ore, but not enough to value. Amo's winze, the 55, yields ½ ton of ore per fathom. We estimate the raisings for A 100 tons.

ALAMILLOS.—Aug. 8: The lode in the 40, west of San Felipe shaft, ½ ton of ore per fathom. The 20 being driven in that direction has impr value, now worth ½ ton per fathom. In the 25, west of Abercrombie's sha lode is regular, and yields also ½ ton per fathom. The 40, west of sha slightly decreased in value, producing ½ ton per fathom. The lode in east of Taylor's shaft, is of no value. In the same level west the lode is spotted with ore. The 85, west of San Adriano's shaft, is unproductive applies also to the 60, east of San Victor's shaft. The 60, west of San yields ¾ ton of ore per fathom. The 40, west of San Carlos shaft, cont produce ½ ton per fathom. Nothing of importance has yet been disco the 30, east of San Jose's shaft. The 40, east of Judd's shaft, is being dri Depozo's winze in a lode worth 1 ton per fathom. The 50, east of this sha tains spots of ore, but not enough to value. Good progress is being made 70, west of Judd's. The 50, east of Judd's cross-cut, continues in hard In the 50, west of Sanchez's winze, the lode is regular, and yielding 1 ton of fathom. The sinking of San Victor's engine-shaft has been impeded by man fixing a cistern and doing other necessary work. The lode in Timeteo's below the 85, has a better appearance, but is valueless. We estimate the r for August at 175 tons.

FORTUNA.—August 8: Canada Inosa: The lode has been intersected the cross-course in the 120, west of O'Shea's engine-shaft: it contains spots ore, but not enough to value. The 110, west of Judd's shaft, has fallen of in the past few days to ½ ton per fathom. The 30, east of San Carlos sha tinues very poor. The 40, west of Abercrombie's shaft, is opening tribute worth ¾ ton per fathom. The 50, west of the same shaft, yields also ¾ fathom. The 60, west of San Pedro shaft, is passing through a bar of tive ground. The lode in the 70, west of San Pedro, is large, and contains s ore. The 70, east of San Pedro, is worth ¾ ton of ore per fathom. The of O'Shea's, is valueless. The 110, east of Addis's, produces ¾ ton of ore The lode in the 90, west of Kennedy's, is open and easy for driving, and ½ ton per fathom. The 190, west of Lowndes', has declined in value to ¼ fathom. In the same level east an improvement has taken place, the lode ducing ¾ ton per fathom. The 90, east of Caro's shaft, is still disordered cross-course. The 80, east of San Tomas shaft, contains spots of ore, but not to value. San Pedro shaft, below the 70, is off the lode, and in very hard Fernandez winze, below the 60, is holed to the 70. Fowler's winze will be holed to the 60 in the present week. Rita's winze, below the 100, yields of ore per fathom. Laborde's winze, below the 80, has again improved to per fathom. Cristino's winze is being sunk below the 90, and in advance 100, west of Lowndes' shaft. It is worth 1 ton of ore per fathom.

Los Salidos: The 130, west of Buenos Amigos engine-shaft, is poor. driving in the same direction, is worth ¼ ton of ore per fathom. In the of the shaft, the ground is unsettled, having just passed through a large course. The lode in the 130, west of Morris's, is split into branches, lead ore. The lode in the same level east is very regular, and spotted The 120, east of Cox's, is opening spendi t ground, worth 2 tons per fathom. 110, east of San Pablo's, has fallen off in value to 1 ton per fathom. of 8waffield's shaft, yields 1 ton per fathom. In the same level east the lo ing been for some time past small and poor is now suspended. Swaffield's shaft, is valueless. In the 65, west of Palgrave's shaft, the become poor within the past few days. The same level east has opened ground in the past month, but is at present unproductive. Alvarez' winze, the 120, contains spots of lead ore only. In Gil's winze, below the 25, the tion being bad sinking is suspended. The lode in Mimbra's winze, below is still poor. Saliente's winze, below the 100, has very much fallen off in Ramo's winze, belw the 55, yields ½ ton per fathom; this is not opening ing to expectation. The machinery throughout the mine is in good working The raisings for August are estimated at 350 tons.

COAL EXPORTED.—This year the value of coals, coke, &c. ported was 4,572,829, against 5,072,997 last year.

CORNISH PUMPING ENGINES.—The number of pumping-en reported for June is 17. They have consumed 1861 tons of and lifted 14,200,000 tons of water 10 fms. high. The average of the whole is, therefore, 51,500,000 lbs., lifted 1 ft. high, by the sumption of 112 lbs. of coal. The following engines have exc the average duty:—

Mellanear—76 in.	Millions 65·0
Mellanear—Gundry's 80 in.	60·0
West Wheal Frances—68 in.	54·8
Wheal Unity Wood—70 in.	62·9
West Wheal Seton—Harvey's 85 in.	62·0
West Wheal Seton—Rule's 70 in.....	67·9

JOHN PETHERICK.—We regret to announce the death, at biton, Kingston-on-Thames, on Tuesday, of Mr. JOHN PETHE F.G.S., Mining Engineer, whose name has long been well kno the readers of the *Mining Journal*, and whose reports upon m properties in various parts of the world were invariably so acc both as to facts recorded and opinions expressed, that the u confidence was always placed in them. Mr. Petherick was 74th year.

COPPER ORES.

Sampled Aug. 1, and sold at Swansea, Aug. 14.

Mines.	Tons.	Produce.	Price.	Mines.	Tons.	Produce.	P
Betts Cove	140	10¾	£6 6 0	Carracedo	96	13	
ditto	140	10¾	6 5 0	ditto	95	12	
ditto	140	10¾	6 5 0	ditto	20	11	
ditto	140	10¾	6 6 0	ditto	29	7½	
ditto	104	10½	6 4 0	Cavera	81	7½	
ditto	104	10½	6 8 0	ditto	80	7½	
ditto	84	8¾	5 1 0	Cronebane	113	2½	
ditto	84	8¾	5 2 0	Burnt Ore	41	2	
Union Ore	140	5½	3 3 0	Copper Ore	21	5¼	
ditto	84	5½	3 2 0	ditto	14	2¼	
ditto	84	5½	3 1 0	Tigrony Pre.	19	33	

TOTAL PRODUCE.

Betts Cove Ore	936	£5651	0 0	Cronebane Ore	113		£ 10
Union Ore	308	957	12 0	Burnt Ore	41		2
Carracedo	241	1621	6 0	Copper Ore	35		6
Cavera Ore	161	676	4 6	Tigrony Precipi	19		3

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
P. Grenfell and Sons	213½	£ 1,417 11
Nevill, Druce, and Co.	385	1,927 4
Vivian and Sons	462	1,725 4
Williams, Foster, and Co.	496½	2,957 18
Mason and Elkington	70	220 10
Charles Lambert and Co.	154	865 18
Sweetland, Tuttle, and Co.	70	437 10
Total	1854	£ 9,551 15

TOTALS AND AVERAGES.

	21 cwts.	Produce.	Price.	Per unit.	Standard
Whole sale	1854	8 13–16	£ 5 3 0	11s. 8d.	£83 11

Copper ores for sale, at Swansea, August 28.—Betts Cove Ore 822—Cape Co —Union Ore 283—Var Ore 194—Berehaven 180—Aljustrel 162—Cavera Ore Cronebane 92—Emily Ore 27—Copper Regulus 15—Copper Matt 6.—Total, 2

HYDRAULIC GRAVEL ELEVATOR.

The large returns which have been made in certain districts in America from the treatment of auriferous gravels by what is known as hydraulic mining has caused some interest to attach even in this country to processes suggested in connection with it. It is stated that in almost every gravel mining country there are extensive beds of auriferous earth, sand, and gravel, which have not heretofore been made available, simply because no efficient system and appa-ratus have been devised for working them economically. In many instances the upper stratum of earth has been worked off at a fair profit by existing methods and devices, but the expense of handling, sluicing, and washing the material at a greater depth became so excessive that the mines were abandoned, in the face of the well-known fact that the richest deposits of gold lie in the strata nearest the bedrock. Many rich and extensive paying deposits lie in creeks, ravines, and flats too low to be worked by bedrock tunnels, cuts, or drains at any cost, and the only method by which they have been heretofore worked has been by the shovel, wheelbarrow, whim, or derrick. This process being very slow and expensive, requiring in many instances pumps, engines, and other machinery to free the mines from water while being worked; rivers have been wing-dammed, turned, and flumed, and the remaining seepage water pumped out, while the gravel has been removed by the old methods of the wheelbarrow and shovel.

That so inventive a nation as the Americans should have been un-able to discover and more economise means of lifting gravel from great depths than the shovel, wheelbarrow, whim, or derrick really appears marvellous, and can only be accounted for on the supposi-tion that hitherto it has only been requisite to lift the gravel a few fathoms, since for small depths the appliances just mentioned are be-yond the shadow of a doubt the most economic. With a steam whim and a few stalwart Cornishmen auriferous gravel containing but a few shillings worth of gold to the ton would not be permitted to remain 10 fathoms below the surface, yet it seems that hitherto the Americans have been quite incompetent to deal with such a difficulty, much so that Mr. George W. Cranston, of San Francisco, has patented a peculiar invention for raising the gravel by washing it up through a pipe, and the machine is said to be successfully working on the American Flat claim, at Fiddletown, in Amador county, and several other places. It is explained that it is not proposed with steam pump up rivers, yet after the surface water has been turned off and the machine is proposed to dispense with shovels, wheel-barrows, and pumps, and work such mines as easy as those which have outlets for sluicing through, and that it is a well-known fact that every hydraulic miner that water and gravel can be driven readily by hydraulic force, and that it is only necessary to give water a greater velocity in a flume to make it carry more gravel. Miners accomplish this give their flumes more grade. Now, the inventor claims to have discovered that it is only necessary to give water a few inches more velocity than it travels in an ordinary flume in order to make it carry gravel up hill. To accomplish this, and impart the additional velocity to the water and gravel, a closed flume is con-structed on an inclination upward, with a horizontal ground section made of cast-iron, and a hydraulic nozzle introduced into a chamber in the ground section of the machine, and the nozzle pointed in the direction it is desired to make the water go. This ground section has an open end, back or behind the nozzle. There the water and gravel enter the machine.

The open end is connected with the flume placed in the bottom of the mine, and the gravel is washed or driven into this flume in the ordinary way of mining. Between this flume and the open throat of the machine is placed a grizzly or grating that shoots off to one side any large boulders too large to pass through the throat of the machine. At the opposite end of this ground section they connect the upward inclined closed flume, and also connect it at its upward end with the flume at the top of the mine, so as to discharge the material and water elevated into this flume down on top. In order to operate this machine the water is turned under pressure into the hydraulic pipe connected with the nozzle, which discharges inside the chamber of the ground section of the machine. They then turn the water on the two monitors that drives the gravel into the flume in the bottom of the mine.

It will be evident from the above description that if there is suf-ficient force exerted by the water discharged from the hydraulic nozzle of the machine to drive and lift the material coming through the flume and into the throat of the machine, and carry it through the upward inclined spout, and discharge it into the flume on top, the earth, sand, gravel, and rocks entering the machine must ne-cessarily be carried along and discharged with the water into the flume on top. The water, gravel, and material are thus made to travel through the machine at high speed by the direct action of the hy-draulic force exerted by the nozzle of the machine. All of the water and material comes in direct contact with the stream of water discharged from this nozzle, consequently it serves greatly to dissolve and pulverise all gravel that is hard and difficult to wash. The gravel must pass through the machine at a high rate of speed, which is absolutely necessary to make it work. The gravel never chokes or lodges when the machine is working under pressure. Gravel and water have been run through this machine by actual test as fast as the water will carry the gravel through a flume on 24-in. grade, and it was impossible to choke the machine by any head of water it was calculated to carry.

The water discharged by the hydraulic nozzle elevator operates to thin the material and water when it enters, and to drive it at the same time up through the elevator spout. This disintegra-ting and washing process above alluded to, produced by the hy-draulic force of the nozze of the machine, so thoroughly washes and carries the gravel in its upward passage through the elevator that the inventors claim that expensive long flumes for wash-ing are not necessary, the gravel being washed better in a single passage through this machine than in travelling one-half mile through an ordinary flume. The process of employing under-current is considered by the San Francisco Mining and Scientific Press, in which the invention is described and illustrated, to be new, and to possess several advantages. They are placed a short distance below the flume from where the elevator spout discharges, drawing the heavier materials, gold, sand, and quicksilver, from the flume soon as it has time to settle from the agitation produced by the charge of the material by the elevator spout, and is conducted away from this place in a side sluice and enters into the box where the material enters the elevator. The quicksilver is thus made to mix with the gravel, &c., up through the elevator spout, driven through by the hydraulic nozzle of the machine, thus mixing, agi-tating, and intermingling with the gold and other materials as it is passing through the machine in an endless returning current. This undercurrent is placed so near the head of the flume that it saves most of the gold, and can be cleaned up every day if desired, with-out stopping the machine or waiting for a long run before cleaning up. In order to recover the elevating or driving water, which is dis-charged by the nozzle of the machine, and utilise it for washing the gravel in the mine into the machine, they construct a settling tank at one side of the flume on the top of the mine, just far enough from the flume from where the spout discharges to allow the sur-plus water to become settled a little. They cut away the side of the flume next to the settling tank, and place bars lengthwise, at short intervals apart, across the opening made in the flume. The surface water of the flume, containing but little gravel, flows over into the settling tank. The bars prevent the gravel and boulders from flowing over with the water, and keep them in the main flume. Several problems which naturally suggest themselves to the practical mind are—How does it happen if the deposits lie in deposits too low to be worked by bedrock tunnels, cuts or drains at any cost that the water flowing through the nozzles to disintegrate the bank, as well as that returning from the elevator, does not accumulate in the mine? If there be an outlet for the mine water, is it not more economic to carry the gravel through the same outlet, and save the cost of elevating altogether? And, if there be no outlet, is it not more economic to lift the gravel by a steam or horse whim than to pump the large quantity of extra water which would in that case have to be pumped? These are at least questions which would have to be settled by those engaged in working an unfavourably situated deposit.

The settling tank used in connection with the elevator has two compartments. The surface water from the compartment next to the flume, after it has settled, flows over into an outer compartment, where it is led back by pipes or otherwise into the mine to wash the gravel into the machine. This tank is provided also with sliding gates next to the flume, to regulate the amount of water drawn from the main flume, so that no more water is allowed to run in the flume than is necessary to carry the gravel through to the dump. The compartment of the tank next to the flume, where the gravel settles, has a gate at the bottom to draw off the gravel collected in the tank, and has a small spout or flume to convey it off down where it can be discharged into the main flume again. This gate can be closed and the gravel drawn off when the box gets full, or can be left partially open, so that the gravel is drawn off as fast as collected.

It will be evident that the greatest amount of wear will be on the ground section and curves, so these parts are made in sections so as to be easily repaired. The machine is made so as to be worked with an irregular head of water. This machine is simple of construction, having neither belts, wheels, pulleys, valves, nor buckets—nothing to get out of repair, and nothing complicated. It can, it is claimed, be run by anyone, and is really a great improvement. It sluices water and gravel uphill, works mines that have no dump, saves bedrock tunnels, open cuts, and drains; works as good as a flume of 10 or 12-in. grade, and will handle as much gravel in proportion to the water used. It can be made of any capacity. Where-ever hydraulic pressure can be had—say, 100, 200, or 300 ft.—a mine can be worked to as good advantage 20 to 50 ft. deep as through an open cut or tunnel.

BLEACHING CHINA CLAYS.

In order to remove the organic or colouring matter which china clays contain in their natural state at a certain stage in the process of their preparation or manufacture, and whilst the clays are in a liquid or running state, Mr. John Carr, of Cardiff, proposes to treat them by adding to them a composition composed of chlorine gas, by parts, 100; hydrochloric acid, by parts, 100 to 200 parts; water and clay combined, 100 parts; sulphurous acid gas and water to 300 parts, water and clay combined; sulphuric acid, 100 parts to 400 parts, water and clay combined; hyposulphite of soda, bisul-phite of soda, and hypochlorite of soda, these are all used in com-bination with the before-mentioned chemicals according as the va-rious qualities of clay require; oxalic acid, by parts, 100; to water and clay combined, 150 parts. The action of all these chemicals on the clay is to effect the process of bleaching without breaking up the component parts of the china clay. The bleaching action com-mences within 60 minutes after application, but the longer the acid is allowed to remain in the clay tank mixed with the clay the more effectual and economical is the process, as china clays vary very much as to the quantity of organic matter originally contained in them. Another advantage of this process is, that when acids are used without the gas the solution may be worked over again by conveying it back over the clay stopes, thereby reducing the ori-ginal quantity required for the purpose of bleaching. When, by means of the action of the chemical before mentioned, the process of bleaching has been completed the clay is then dried in a kiln as usual. The improved apparatus for producing the sulphurous acid gas required in this invention consists of an erection constructed of fire-bricks and clay, measuring about 6 ft. in length, 6 ft. in height, and 3 ft. in width, divided into three compartments or chambers, and numbered 1, 2, 3, respectively.

The dimensions of the several chambers vary. Usually, compart-ment No. 1 is about 2 ft. high, 1 ft. 6 in. wide, has a semi-arched roof; in this arched roof he places sulphur and sulphuric acid, which are ignited and kept constantly burning either by means of air sup-plied through a suction pipe inserted within 9 in. of the top of the chamber No. 3, or by a fire lighted underneath the slab on which are placed the sulphur and sulphuric acid above named; this chamber is also provided with an aperture through which the gas escapes and passes into chambers 2 and 3. Chamber No. 2 is about 3 ft. by 1 ft. 2 in., is filled with clean gas coke, and at its extreme end there is fixed a 4-in. earthen pipe, about 1 ft. long, to which is attached a leaden pipe of corresponding diameter, and sufficiently long to convey the gas water to the clay as it runs through glazed earthen pipes, or covered launders, from the micus to the settling pits. Chamber No. 3 is about 5 ft. high, 1 ft. 2 in. square, having a small aperture at the top, in which is placed a pipe of $\frac{3}{8}$-inch bore. This pipe conveys a constant stream of water into this chamber, which is also filled with clean gas coke like unto chamber 2, the water passing down through the before-mentioned coke becomes impreg-nated with the generated sulphurous gas passing out through the pipe inserted at the end of chamber 2. Within 9 in. of the top is a suction pipe, 3 in. in diameter, referred to in the description of chamber 1, and is carried out to the nearest stream of water to keep up the ignition of chamber 1, and thus dispense with the use of a fire; but the apparatus is provided with a suitable fire-place and ash-pit for use when no stream of water is near at hand for feeding this suction pipe.

IMPROVEMENTS IN STEAM PUMPS.

Upon the piston-rod or pump-rod, and moving with it, Mr. H. G. Harris, of Westminster, proposes to place a fixed arm or bracket. The outer end of this bracket is bored to fit the steam valve rod on which it slides, and is fitted with a pivotting key to work in spiral grooves cut in the steam valve rod. The steam valve rod has no endway movement, but can revolve freely in its bearings, and has made in it two spiral grooves, each consisting of a half turn of a thread of twice the pitch of the stroke of the engine, one groove having its pitch in one and the other groove in the opposite direction. Then the pivotting key passing from end to end of these grooves by the motion of the piston-rod will cause this rod to revolve continu-ously in one direction. In the one arrangement the steam-valve, which is cylindrical, is upon the end of the rod (inside the valve casing) and revolves with it. This valve is cast with its ends open and with two steam and two exhaust ports so arranged that a steam and an exhaust port are opposite each other, but are separated by a diaphragm cast with the valve in such a manner as to form two chambers, one of which contains both the steam and the other both the exhaust ports. A steam-tight joint between the steam and the exhaust is made at one end of the valve (and by the valve itself) against a corresponding face on the valve casing.

Steam is admitted to the end of the valve, and the exhaust passes from the opposite end. Surrounding this valve is a cylin-drical bush forming the expansion valve, and having steam ports in it with one end inclined; this bush can be moved endwise by means of a lever or hand-wheel and screw, so that the width of the steam port in this bush over that leading to the cylinder is varied by the movement of the lever or hand-wheel and screw, thereby causing the steam-valve to cut off the steam from the cylinder earlier or later in accordance with the position of this expansion valve, the excess of length of the exhaust ports in the steam-valve (over the steam ports) enabling the exhaust to take place through the whole of the return stroke, no matter where the cut-off of steam may occur. In another arrangement there are upon the (revolving) valve rod, and in the valve casing, two or more eccentrics which work respec-tively an ordinary slide valve and expansion valves (these valves, however, working at right angles to the stroke of the piston), and the expansion is varied in the ordinary way by right and left-handed screws upon the expansion valve's rod and nuts to correspond in the valves.

In some convenient position, preferably cast upon the valve chest, there is secured a small cylinder in which works an air-tight piston. This piston has secured in it and working with it a rod, which rod is attached to the lever which is upon the spindle of the expansion valve. One end of the small cylinder—that is, one side of the air-tight piston—is in connection with the air vessel or discharge pipe of the pump; upon the other side of this air-tight piston, and between it and a fixed bracket, there is an adjustable spring. then the pressure in the air vessel or discharge pipe of the pump acting on one side of the air-tight piston and against the adjustable spring will cause that piston to assume various positions in its cylinder in accordance with that pressure, and then this air-tight piston being in connection with the expansion valve will cause that expansion valve to vary its position, and, therefore, to vary the cut-off of the steam. In another arrangement there are two small cylinders, each being fitted with an air-tight piston and rod. These rods are in direct attachment with throttle valves placed in the steam pipe near to the cylinder; one side of each of these air tight pistons is in connection with the air, and in the case of the one small cylinder the other side of its piston is in connection with the suction of the pump, so that when the pump is at work there will be in this small cylinder an air pressure upon one side of the piston, and a partial vacuum on the other. In the case of the other small cylinder the opposite side of its piston to that which is in connection with the air is connected with the air vessel or discharge pipe of the pump, so that when the pump is at work there will be in this small cylinder an air pressure on one side of the piston, and a pressure upon the other side of the piston equal to the air pressure, plus the weight of the head against which the pump is working.

When the pump is first started only a small amount of steam can pass the throttle valves (which are actuated by the air-tight pistons) into the steam cylinder, and the pump starts but slowly; as the pump works, however, a vacuum is formed in the suction pipe of the pump, and the air pressure acting upon the one side of the air-tight piston causes it to move in its cylinder and to open the valve to its full area. In the case of the other small cylinder, one end of which is in connection with the air vessel or delivery pipe of the pump, in proportion as the head of water against which the pump is working is more or less, so does this piston occupy different posi-tions in its cylinder, thereby causing the throttle-valve to admit more or less steam to the steam cylinder, the least steam being ad-mitted when the pressure of water is least. In this arrangement either or both cylinders and their throttle-valves may be used to govern the pump.

FOREIGN MINING AND METALLURGY.

Comparatively few orders have been received by the French iron trade during the last few days, and there has been in consequence no increase of activity at the works. In the Haute Marne mer-chants' iron is the most in favour, but plates and other articles are in little demand. In the Meurthe-et-Moselle pig has rather expe-rienced a check; business has been done at 2*l.* 9s. 6d. to 2*l.* 10s. 4d. per ton. Old rails, which are daily worked up into iron of com-merce, cause pig to be in considerable disfavour—in fact, it is neg-lected. The steelworks of the East and Centre of France have all work on hand; this remark especially applies to rails and tyres. The question of the renewal of treaties of commerce continues to occupy a large amount of attention. The principal industrials of the Loire and southern districts recently profited from a journey made by M. de Meaux to St. Etienne to present to him some observa-tions upon the subject. The Minister of Commerce, whose tenden-cies are rather in the direction of free trade, contented himself with assuring a deputation which waited upon him that he would make every effort for the protection of such a considerable industry, but that he could give no positive assurance as to the final result of any negociations which might be undertaken. A railway station, in-tended to accommodate the Paris Exhibition of 1878, was originally intended to have been built of wood; it is, however, to be con-structed of iron, and the work of construction has been entrusted to M. Baudet, of Paris.

There cannot be said to be much, if any, improvement at present in the French coal trade. The basins of the Nord, the Pas-de-Calais, and the Loire have extracted little, forwarded little, and sold little. The iron trade is still only consuming upon a small scale, and, of course, this circumstance has a great effect. No improvement in affairs is now anticipated until the winter sets in.

Contracts have just been let at Brussels for 300 coal trucks of 10 tons each. MM. Delforge and Co., of Seneffe, offered to supply 50 of these trucks at 79*l.* 16s. each. MM. Nicaise and Delcave, of La Louviere, required 86*l.* per truck. The Belgian Company for the Construction of Engines and Railway Plant required 86*l.* per truck for one lot, and 86*l.* 12s. per truck for another lot. The Belgian Metallurgical and Colliery Company, the Dyle Workshops Company, M. Cabany, of Molines, &c., also tendered at about the same rates. At Antwerp a contract has been let for two lots of 653 tons each of Vignoles iron rails, with fish-plates, but without bolts, at 5*l.* 9s. per ton. The contract was obtained by the Monceau-sur-Sambre Com-pany. The Thy-le-Chateau Company required 5*l.* 11s. 3d. per ton for a similar delivery, and the Acoz Forges Company 5*l.* 16s. per ton. The Association of Engineers Educated at the Liége School has just held its annual general meeting at Mons, and some interesting in-dustrial excursions were made upon the occasion. Some sinking works of the Ghlin Company, which is sinking by the Kind-Chaudron process two pits, which have to attain a depth of 1000 ft., were in-spected. A visit was also paid to the Levant du Flénu Colliery, where an exhibition of perforators of various kinds had been or-ganised. From the Levant du Flénu Colliery a special train con-veyed the excursionists to Crach et Picquery, where some Guibal and Lamielle ventilators and some apparatus for washing coal and producing coke were especially remarked. The Produits Colliery was visited last, and here a special coke manufactory was examined. The gases proceeding from the distillation of the coal are collected, and the sub-products utilisable in industry are separated; the re-mainder heats the furnaces in which the coke is made. The venti-lating apparatus installed in a central building is powerful and remarkable, and the various centres of extraction admit of a con-siderable production and economical deliveries. The collieries of the Marcinelle and Couillet Company were worked at a good profit in the year ending March 31, 1877. The blast-furnaces and rolling mills were, however, worked at a loss during the year. The ulti-mate rough profit derived from the operations of the year was 36,273*l.*, but after providing for the service of the company's loans, general expenses, and sundry redemptions, there was no balance available for dividend upon the shares, although the directors were enabled to carry forward 406*l.*

Contracts are about to be let at Brussels for 202,800 tons of coal, intended for the service of the Belgian State Railways as from Oct. 16, 1877. It would, perhaps, be too much to affirm that the prices which are likely to be witnessed at the adjudication will be higher than those of the last previous contracts, but such a circumstance would not be at all astonishing, as the period of the delivery coincides pre-cisely with the commencement of the winter session. In any case the Belgian Minister of Public Works is probably acting judiciously in securing without further delay the coal which he requires. In-dustrials would probably do well for the same reason to let con-tracts, but the requirements of industry are inconsiderable, and pur-chasers appear to prefer to buy simply from day to day: upon the whole, the deliveries from the various basins must be said to be un-important. Business is generally quiet, as well at Liége as at Char-leroi and in the Centre; the present is not encouraging, all that coal-owners can do is to hope on as regards the future.

Operating the Valves of Air-Compressors.—The invention of Mr. J. Shaw, of Ovenden, near Halifax, relates to apparatus to be used for opening and closing the valves of air-compressors, and consists—firstly, in operating such valves by means of a hydraulic apparatus, comprising an ordinary cylinder and piston, the cylinder being attached to the piston-rod or other moving part of the com-pressor, and the hydraulic piston-rod being connected to a cross-head to which the valve spindles of the compressor are attached; secondly, instead of the appliances described he may use a steam cylinder and piston, arranged so as to act either in conjunction with or independently of the moving parts of the compressor; thirdly, he may operate such valves by means of one or more eccentrics suitably arranged, and worked from any convenient source. By these methods the operation of the valves is effected in a more posi-tive manner than by the action of atmospheric pressure or friction, which have hitherto been relied on for the purpose.

placed either outside or inside of the house, and being alway empty nothing offensive can enter any of the rooms. The apparatus has been fixed in several places near Stirling, and is well worthy of inspection.

FOREIGN MINES.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices received Aug. 1, 1877, ex Minho (s.), dated Morro Velho, July 2:—

GOLD EXTRACTED TO DATE.—The produce extracted during the second division of June, a period of 11 days, has amounted to 12,884·4 oits.=1485·3615 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
From general mineral	5,283·0	from	944 =	5·596
Mineral roughly freed from killas	6,138·0	,,	692 =	8·869
Cotesworth mineral	376·5	,,	130 =	2·896
	11,797·5	,,	1766 =	6·680
Praia, re-treatment, &c.	1086·9	,,	— =	·614
Total	12,884·4	,,	1766 =	7·294

Equal to ..... 1485·3615 ozs. troy=·8418 oz. troy per ton.

Advices received Aug. 14, 1877, ex Tagus (s.), dated Morro Velho, July 18:—

GENERAL OPERATIONS.—There have been no interruptions worthy of note during the past month's operations. The borer force has been fairly adequate, and the supply of water fairly up to our requirements. There has been a slight increase in the quantity of mineral stamped, though the average produce per ton is lower, the extraction of better stone from the stopes west from sump being interrupted by the extension of the A shoot 60 ft., which is now completed, and in good working order. A great quantity of large and small timber has been placed in the mine, and the walls and hauling ways may be said to be fairly secure.

GOLD PRODUCE FOR THE MONTH OF JUNE.—The produce extracted during the month of June amounts to 36,211·4 oits., or 4174·5353 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
From general mineral	14,450·0	from	2728 =	5·296
Mineral free from killas	17,723·6	,,	1960 =	9·042
Cotesworth mineral	1,301·0	,,	367 =	3·544
	33,474·6	,,	5055 =	6·622
Re-treatment and Praia	2,736·8	,,	— =	·854
Total	36,211·4	,,	5055 =	7·476

The return for the month, though considerably under that for May, is favourable, considering the low produce of the mineral treated, the "general body" falling short by ·882 oit. per ton, and "mineral freed from killas" 1·026 oit.

During the next month, now that the A shoot is finished, and the work for the lowering of the B kibble to section 256 B nearly completed, a better class of stone will be available.

COST AND PROFIT.

The produce for June being	36,211·4 oits.		
Deduct loss melting into bars.....	247·6 ,,		
	35,963·8, at 7s. 9d. per oit. =	£13,935	19 4¼
Cost		7,001	17 4¼
Profit for the month of June		£ 6,934	2 0

MINE DEPARTMENT.

Mineral delivered on spalling floors	6576 wagons.
Average number of natives daily	193·76
Average number of borers daily	124·88
Mineral quarried per borer	2·07 wagons.

The small duty per borer is due to a large amount of mineral it was necessary to remove in section 256 B from the face of the stopes, together with part of the killas on the south wall, consequent on the lowering of the B kibble. The non-completion of the hauling arrangements at this point has prevented the raising of this mineral to surface.

LODE IN THE SUMP.—There is no change to note in the general character of the mineral body at this point; the quantity quarried being small, owing to the stoppages necessary for the placing of A shoot. Measures are now in hand to construct a sollar above the sump, and the placing of a drum roller, so as to better facilitate the deepening of the sump, and with it an increased depth of stoping area west from same. Against the south wall some 2 ft. of good mineral has been left for the better protection of the men until the required timberwork is complete, when stoping will be resumed, as well as on the good mineral available in section 258 D, &c.

STOPES WEST FROM SUMP.—The 258 C fairly maintains its size and quality, its width of 41 ft. being nearly pure pyritic mineral.

257 D: There has been a slight falling off in the improvement referred to in last report, the expected extension of the mineral body easterly and southerly being much disordered by strong leaders of white compact quartz, similar in character to the large body of quartz west of the tooth.

256 B: The stoping operations have been confined to the removal of poor killas on the south wall or line of extension of B kibble. The lode against the north wall, as before stated, is of good quality.

From the other stopes in B section a fair average amount of mineral has been quarried, with no alteration to note in their general appearance.

216 D: The quality and quantity of mineral from this section is below the average, owing to the want of a lower sollar, where the body of mineral is of larger dimensions and easier of extraction.

EASTERLY AND WESTERLY LEVEL EXTENSIONS.—Owing to the slow advance, consequent on the hard nature of the rock, there are no changes worthy of mention.

At an early date it is intended to place the McKean drill to work in the western driving.

A sub-division of the mine map sections has been made, to more clearly indicate the several points of operations.

REDUCTION DEPARTMENT.—The necessary excavation of earthwork for the new stamps is being rapidly pushed forward. A large Mexican arrastra, intended for direct amalgamation of both concentrated rich and waste sand, is nearly completed. For a better recovery of the gold from the rich pyrites treated at Herring's and Addison's, the head skins are being washed more frequently. The stamping mills at the Praia are being put into repair for a more extensive treatment of the large body of sand now accumulated.

GOLD EXTRACTED TO DATE.—The produce extracted during the first division of July, a period of nine days, has amounted to 9736·0 oits., or 1122·4 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	3744·5	from	732 =	4·738
Mineral free from killas	4833·0	,,	515 =	9·384
Cotesworth mineral	357·9	,,	138 =	2·593
	8935·4	,,	1435 =	6·226
Re-treatment and Praia	800·6	,,	— =	·557
Total	9736·0	,,	1435 =	6·783

Equal to 1122·4023 ozs. troy.

In the above division a very small proportion of the better class of mineral now available has been brought to surface.

The mine returns for the first fortnight of July embrace a period of 13 days:—

Average attendance of natives daily	205·92
Average attendance of borers daily	134·61
Stone delivered on spalling floors	3365 wagons.

Duty per borer, 24·15, or 1·85 wagon per borer daily.

The above duty is small as already explained. With the three level extensions a proportionate falling off will continue, owing to the lesser duty of the holes blasted compared to the stopes.

The work generally throughout the establishment is going on satisfactorily; a slight increase to the borer force has been obtained.

MINE.—The contraction, previously reported, of the mineral body in the level above sump is more favourable—a portion of the body of killas dividing the good mineral giving way to leaders of pyrites.

The following telegrams have been received:—

On July 20,—"Produce 9 days, first division of July, 9500 oits.; yield, 6·7 oits. per ton. Produce small from work going on, which interferes with working best stopes."

On July 24—"Yield 7·3 oitavas per ton. Profit for the month (June), 6900*l*. General work in mine and on surface going on well, and satisfactory duty being performed."

On July 31—"Produce 11 days (second division of July), 15,250 oitavas; yield, 8·2 oitavas per ton."

On August 13—"Produce for month (July), 42,000 oitavas; yield, 8·3 oitavas per ton. General work in mine and on surface going on satisfactorily."

DON PEDRO NORTH DEL REY.—Report for June: Produce from 2141·50 tons, dry weight, 7100 oits. = 3017*l*. 10s.; cost, including all general expedses, outlay on viaduct from adit to reduction works; also cost of labour and materials, amounting to 118*l*. 19s. 11d., for erection of permanent pumping machinery, 2302*l*. 6s. 8d.—Capt. Vivian (July 18) reports—Produce: Weighed to date, 2516 oits.—Mine: As regards the state of the different points in operation at Maquiné, I cannot but confirm my former statements, and particularly my last of July 10. In a telegram received on July 24 the profit for June was, through an error in the transmission of the message, advised as 450*l*. instead of 700*l*. Telegram from Rio, dated Aug. 9, referring to a later date than the above report, advised 5100 oits. for the month of July.

JAVALI.—The company's manager (July 6) reports that the mill working 19 days crushed 1350 tons of quartz, yielding 373¼ ozs. of gold. The remittance is valued at 92*l*.; the expenditure (including 13*l*. on capital account) had been 94*l*. The wet season had just set in, and Capt. Sohns would remain at the mines for another month, in order to see to the correct working of the tailing mill.

SAN PEDRO.—J. Phillips, July 1: The cross-cut in the 165 has since last report been driven about 3 metres into the manto, and I am sorry to state that it has thus far proved unproductive; however, the ground is of a very kindly nature, composed of soft white granite, quartz, and small quantities of rich yellow bronze, but as yet not in sufficient quantities to value. The manto has a much better appearance than in the level above, and the ore that it contains is of a much richer quality, being almost free from mundic, and I hope and expect when we get a little further into the manto we shall meet with a good bunch of ore. We are still driving by four men, at $20 per metre. The coming water is not so much as when last reported; it is now about 4000 gallons per day. The winze sinking in the bottom of the 150 is much the same as when last reported, still producing stones of ore, but not sufficient to value; this is now down 13·40 metres; below this level we are now sinking with three men, at $20 per metre. I expect we shall communicate with the cross-cut in the 165 in about two months. It was impossible to sink this before the manto was drained; we have hitherto been following the water down, but now that the manto is comparatively drained we shall be able to get on faster. The cross cut driving towards the manto Verde is without change, still hard; we are driving here by one man, at $22 per metre. In the 165 the cross-cut is in from the shaft 24·10 metres. The stope in the back of the 135 is suspended at present, as it has become too poor to work on account of the mine, but I expect to be able to set it on tribute in a few days. The tribute pitches in the 88 and 47 are producing small quantities of ore, which leave a profit to the mine and the tributers.—Old Works: The stope in the side of the works, a few metres from surface, is much the same as when last reported, yielding 2½ tons of 20 per cent. ore per fathom; but I do not think it will last much longer, as it is becoming very narrow. The tribute pitch in the manto Verde is suspended, as it has become less productive than when last reported. Everything at surface and underground is working in a satisfactory manner.

RICHMOND CONSOLIDATED.—Telegram: Decision to be rendered next Monday. Ore body between compromise line and fourth level looking well. Will probably justify starting furnaces Sept. 1.

CHONTALES CONSOLIDATED.—Mr. White (July 5) reports having arrived at the mines on June 24. So far as he had been able to form an opinion from the short time between his arrival and the departure of the mail he considers the extensive property belonging to the company a good one, but depending for its success on development in depth. The gold remitted by this mail, is valued at 300*l*., of which 200*l*. is from crushed ore and 100*l*. from old copper plates. In addition to this, gold has been sold in the country amounting to 478*l*. 8s., but the complete accounts for the month have not come forward.

LONDON AND CALIFORNIA.—The result of the working at the Original Amador Mine for the month of July is estimated at $9500.

SIERRA BUTTES.—Result of the working at the Sierra Buttes and Plumas Eureka Mines for July:—Sierra Buttes: Receipts, $29,079; total California expenses, including cost of mining and milling, $20,420.—Plumas Eureka: Receipts (including sulphurets), $36,733; total California expenses, including cost of mining and milling, $17,075.

I.X.L. (Gold and Silver).—Lewis Chalmers, July 23: I send herewith foreman's report, from which you will see we are making better headway since we commenced working by the day, after the throwing up of the contract, which left us no other alternative, I am still pushing the 200 north. The influx of water betokens the possibility of getting into an ore body ere long. A little ahead of the face of the present drift, 200 ft. above us, in the old workings, rich ore was taken out.—Foreman's Report: The engine-shaft is now down 77 ft. from the 200 station —10 ft. sunk this week; the said drift is in hard rock in the bottom; some small streaks of quartz are coming in, and it is making good headway, considering the rock the miners have to contend with; it is well timbered to near the bottom—4 ft. apart each set, plumb and level. The north drift (or 200 ft. level) is now in 575 ft. from cross-cut; 10 ft. driven this week is in ledge matter and ore 5 ft. thick. Only three miners at work in this drift. A strong flow of water from the face—all coming through the ledge, which indicates a body of ore not far ahead. Everything is running and working well.

SANTA BARBARA.—Mr. Hilcke (Pari, July 12) reports: During June 1002 tons of mineral were stamped, yielding 3·571 oits. per ton, or a total of 3578 oits. of gold, which, valued at 8s. 6d. per oit., amounts to 1520*l*. 13s. as the estimated value of the produce for the month of June. The cost for the same period was, at Exchange 23⅞d., 1068*l*. 16s. 5d., thus leaving an estimated profit of 451*l*. 16s. 7d. for for June. The yield of the ore per ton was a little less than in May, owing to some soft killas in the hanging wall at No. 4 stope south of No. 2 shaft, which had to be taken down, and got mixed with the smalls of the good stone, with which it was stamped. The Mine Captain reports as follows:—Mine: Stope No. 3, and Adit Level: The lode in the upper part of this stope has become small and poor, and very spare for quarrying. In the adit level the lode is 6 ft. wide, of fair quality, and looking well going down.—Stope No. 4, South of No. 2 Shaft: The lode in this stope is about 9 ft. wide at the bottom and 4 ft. wide at the top, producing fair quality mineral. The hanging-wall has been rather soft and jointy, and we have had to take away some soft killas, and put in a good many pieces for supporting the wall. For the hauling machine the excavation for the horse-whim has been finished, hitches and headways cut, and two upright pieces of timber put in and pegged for carrying the span beam of the whim, two stull pieces taken out of the stull between the whim and shaft, for the wire-rope to pass, and two pieces of timber taken out, and several holes blasted to make room for the landing platform. The quantity of ore raised during the month amounted to 1236 tons, of which 234 were rejected as refuse stone, and 1002 tons treated at the stamps. Average quantity of ore raised per borer for the month 26·5 tons.

NEW ZEALAND KAPANGA.—J. Thomas, June 30: Since my last advices I beg to give you the following details of our several operations:—Crushing: We have finished crushing 125 tons of quartz, with 68 lbs. of specimens, which have produced conjointly 130 ozs. 3 dwts. 18 grs. of melted gold, worth 2*l*. 16s. 5d. per oz., averaging 1 oz 19 grs. per ton.—Underground: The 60 during the month I discontinued driving south, and put the men to open the lode in the back of this level, in order to facilitate the ground opened to be stoped away with speed; the lode is 18 in. to 2 ft. wide, and yields from 3 to 4 tons of quartz per fathom, with occasional rich specimens. After laying open the back I put the men to cut a plat to resume the sinking of the sump winze on the course of the lode under this level with all speed; the plat is finished, and the sinking will be commenced on the 2nd proximo. The south stope above this level has been further stoped away south of the sump winze 6 fms. long and 2 fms. high; the lode here is of the same class and character as above described, and yielding about the same. In the north stope above this level about the middle of the month I put a pare of men to open up the ground north of the sump winze; they have stoped the lode 3 fms. long and 2 fms. high. At present the lode is small here, little being yet done; I have nothing particular to report. The 50 is further driven north on the course of the lode towards the Albion ground 8 fms. 2 ft.; the distance driven from sump winze is 44 fms.—the ground has become much better for driving, and has changed very favourably in character. The lode has become regular, and of the same kindly nature as it is about the sump winze, showing we are through the hard blank belt of ground existing between the two shoots of gold-bearing ground, and also that we are approaching the auriferous section of the Albion shoot: the lode is 18 in. wide, carrying a tough seam of black flookan and ruby quartz, with every indication for gold. In the machinery department the new pinion wheel driving the stamps is fixed in position, and is now working well. The winding and pumping engines are in first-class order, and the underground water-wheel is pumping and winding from the sump winze below the 50 fm. level without any expense or repairs.—Remarks: Hitherto we have been hauling the underground stuff to surface by kibbles. Now several sections of the mine are being opened and stoped out, it has become necessary to put cages in the shaft to lift the loaded trucks to surface. This work is now completed; a truck holding ½ ton of stuff may be filled as it is broken from any part of the mine, and emptied at surface at the stamps or dumps without waste or further handling.—Labour Employed: The number of hands at present employed are—Underground, 22; landers, 2; enginemen, 5; smith and assistant, 2; carpenter, 1; sawyers, 2; stamps, 5; surface, 2; underground agent, 1; manager, 1.—Total, 43.

BENSBERG.—C. Craze, Aug. 13: Victoria shaft is being sunk with fair speed; the lode here is not producing quite so much lead as it did, but it has a kindly appearance, which leads me to hope for an improvement again soon. In the 22 west we have a good orey lode, but the ground is hard and spare for progress. There is no change in the 22 east since my last; the same remark will apply to all other points. We have now finished repairing our old boiler, and set it to work whilst the new one is being cleaned.

ARGENTINE.—Capt. Coward, June 25: Mines: All points are without change to notice except in the Pique underlie shaft sinking below the 44, where, from the presence of all the water in the shaft coming out of a flow on the western side near the bottom, there are strong indications of a part of the lode standing in that direction. Thinking the proving of this to be important, I have suspended sinking for the time, and put the shaftmen cross-cutting west from the bottom of the shaft.—Available supply of ores for Reduction Works: The lode in the bottom of the 44, north of Pique, shows no signs of falling off in quantity nor quality. The 44 north is pushed with all vigour to reach the Cano Larvo. The 20 cross-cut from the shaft (Captain section) is being pushed in like manner, so as to make the ore at these points available at the earliest possible date. But all the other points stopped should be resumed, and other places set to work, so as to always have a reserve of ore broken and at surface. There is no lack of ore discovered in the mines, but as I have informed you before, taking into consideration the fluctuating and uncertain character of the ore ground, there should be a large number of points working at the same time, so that a regular supply of ore could be ensured.

CAPE COPPER.—Capt. Tonkin, June 30: Ookiep: The shaft below the 80 continues very difficult to sink, but there is no particular change in the nature of the ground, excepting that it shows some spots of copper ore. The new shaft from surface has now reached a depth of about 11½ fms., and the last 9 ft. of the sinking has produced some fine lumps of rich copper ore. In the present bottom of the shaft there is a vein about 12 in. wide, which runs north and south, and yields good stones of ore, but I am not yet prepared to say whether any importance can be attached to this discovery or not. The 80 east from No. 19 winze has been driven through ground of a very changeable nature. At one time during the month the end looked very well, being worth 5½ tons of rich copper ore per fm., but since then it has fallen off, and its present value is 3½ tons per fathom. In bottom of this driving there is a good bunch of high quality ore, while the upper part is unproductive. The stopes in the 80 have yielded well, and the high quality ores taken from these places have helped very much to keep up the percentages of the monthly returns. The 68 east from No. 13 winze is being driven through ground that produces good stones of copper ore, but the yield is not enough to value. The stope in bottom of the 68 at No. 16 winze continues to hold good in depth, and we are taking a considerable quantity of rich ore from this working. The 58 east from No. 20 winze shows a few spots of copper pyrites, but the general nature of the ground is unpromising. The 48 east from No. 14 winze has not changed since last report. There is an improvement in No. 22 winze below the 68; the sinking will at present yield 1½ ton of ore per fathom. The stopes throughout the mine (not particularised in this report) have, on the whole, yielded remarkably well. Our dressing operations have been carried on regularly, with a full supply of labourers.

SPECTAKEL.—Capt. Tonkin, Capt. Ninnis, June 25: The stope in the 46 has not shown any favourable changes for some time past, and we intend shortly to suspend the workings at this point, in order to carry on the explorations in the bottom, as indicated in former reports. The 36 east towards flookan course has not revealed any ground that can be stoped away at a profit. The present end of the driving produces a little copper ore, but not enough to value. The shaft under old workings, and south-west of incline, is in hard and poor ground, consequently our progress in sinking is very slow.

TRIAL MINES.—Capt. Tonkin, Capt. Lanksbury, June 15: The 20 fm. level east at Karoluseberg is in poor and unpromising ground, therefore the driving is suspended. We have started a cross-cut north from side of the above-named level, in order to prove whether or not there are other veins in the immediate vicinity. The 20 west has improved of late, and the end is at present yielding some good stones of copper pyrites. The shaft below the 17 at Nababeep has nearly reached the required depth for driving. We shall shortly push out from bottom of shaft to prove whether the ore continues in depth or otherwise. The 17 east from old shaft has not changed since last reported. At Narrap the 20 east yields a little more copper ore than usual, still the chief produce is magnetic pyrites. We are driving a level from bottom of the trial shaft west of Ookiep, and the end is spotted throughout with yellow and purple copper ore, but there is nothing to value. At Long Kloof we have carried out trials on three copper indications, but in no place could we trace the ore in depth; therefore we have suspended all operations in that locality.

RETURNS FOR JUNE.—Ookiep, 950 tons of 32 per cent.; Spectakel, 23 tons of 25 per cent.—Bills of Lading Received: 80 tons of ore, per Nyanza; 160 tons, per Courland (s.); 380 tons, per Marion; and 450 tons per Star of the Isle.—Arrival at Port Nolloth: The Antonio Vinent and the Tacna.—Arrivals at Swansea: The Countess and Selina.

LUSITANIAN.—August 7: Palhal: The lode in Taylor's engine-shaft, sinking below the 200, is worth 4 tons of copper ore per fathom for the length of shaft:—15 ft. In the 50 cross-cut, north of Perez' shaft, the ground is still hard, and no more lode has been met with. In winze No. 108, below the 150, west of the slide, the lode is small and unproductive. Winze No. 106, below the 28, east of River shaft, is suspended; the lode is small. A stope in the bottom of the 28, west of this winze, is yielding 1 ton of ore per fathom. The lode in winze No. 107, below the 180, west of Taylor's and west of the slide, which is being sunk on the south part, is worth ½ ton of ore per fathom.—Levels on Basto's Lode: In the 200, west of Taylor's, the lode is worth 2 tons of ore per fathom. The lode in the same level west contains stones of ore. The lode in the 190 west is worth nearly 2 tons of ore per fathom. In the 180 west, on the north part, the lode does not make any regularity. In the 160 west the lode is in small strings and unprofitable. The lode in the 150, west of the slide, is composed of quartz and country. The lode in the 90, east of River shaft, is composed of quartz, flookan and country, with spots of lead. In the 70, east of River shaft, the lode is 2 ft. wide, composed of quartz, flookan spotted with lead, and in the 5s the lode is 4 ft. wide, composed of quartz, flookan and country.—Carvalhal: The driving of the 60, west of the cross-cut, south incline-shaft, is suspended for the time: The lode in the 30, north of the cross-cut, lode, is 1 ft. wide, composed of quartz, mundic, and good stones of blende.

BRITTANY MINERALS.—John Edwards, Aug. 11: There is no change worthy of remark in the sump sinking below the 70 since last report; ground sunk the past week 2 ft. The lode in the 70 end driving south from sump shaft looking quite so well as last reported on, now worth from 15*l*. to 20*l*. per fathom for silver-lead ore. The ground here is still favourable for progress; driven during the past week 6 ft. The lode in the rise in the back of this 15 in. wide, worth 10*l*. per fathom for its length 12 ft. The lode in the back of the 70, about 3 fms. behind the present end, is worth fully 25*l*. fathom for lead ore. We shall commence another stope here in the back of level in a short time. All the machinery is in good order, and working well. raised since last report 10 tons.

LINARES.—Pozo Ancho: The lode in the 120, east of San Tomas engine-shaft, is large and strong, but does not contain any ore. The 100, east of Warne's shaft, is producing ¾ ton of ore per fathom. The same level west has declined in value during the past fortnight. The 120 cross-cut, south of Peill's, is in hard ground. The 105, west of Peill's shaft, has improved to 2 tons of ore per fathom. The 68, west of this shaft, is also worth 2 tons per fathom. The 68, being driven in same direction, is without anything to value. The 105, east of Peill's, is driving, and the lode yields 2 tons per fathom. In the 90, east of San Francisco shaft, the lode is compact and regular, and produces 1 ton of ore per fathom. The 65 continues without any improvement. San Tomas engine-shaft, sinking below the 120, is in hard ground. The lode in Warne's shaft, sinking below the 100, is small and strong, and yields 2 tons of ore per fathom. No. 221 winze, below the 100, is being sunk in a lode worth 2 tons per fathom. The tribute departments very well in the past month, and they are now without any change worthy notice. The surface works are being carried on with their usual regularity; the machinery is in good working order. We estimate the raisings for August at 200 tons.

Quinientos: Satisfactory progress is being made in the 100 cross-cut, south Taylor's engine-shaft, considering the hardness of the rock. The lode in the west of Taylor's shaft, continues hard and poor. In the 80, west of this shaft, the lode is regular, but of no value at present. The 90, east of Taylor's, opened a piece of ground in the past month worth 2 tons of ore per fathom. The 80, east of Addis's, contains spots of ore, but nothing to value. A good length of ground has been driven through in the past month in the 80, west of Carlos shaft, but unfortunately the lode is poor. The 80 east is without improvement. The lode in the 65, east of Judd's shaft, is small and poor. In the same direction, the lode is disordered and unproductive. The lode in the winze, below the 80, consists of carbonate of lime and quartz. Facundo's below the 65, yields a little ore, but not enough to value. Arno's winze, the 55, yields ½ ton of ore per fathom. We estimate the raisings for August at 100 tons.

ALAMILLOS.—Aug. 8: The lode in the 40, west of San Felipe shaft, yields ½ ton of ore per fathom. The 20 being driven in that direction has improved in value, now worth ½ ton per fathom. In the 25, west of Abercrombie's shaft, the lode is regular, and yields also ½ ton per fathom. The 40, west of shaft, is slightly decreased in value, producing ½ ton per fathom. The lode in the 50, east of Taylor's shaft, is of no value. In the same level west the lode is large and spotted with ore. The 85, west of San Adriano's shaft, is unproductive. The 60, east of San Victor's shaft, yields also to the 60, east of San Victor's shaft. The 60, west of San Carlos shaft, yields ¾ ton of ore per fathom. The 40, west of San Carlos shaft, continues to produce ½ ton per fathom. Nothing of importance has yet been discovered in the 30, east of San Jose's shaft. The 40, east of Judd's shaft, is being driven. Depozo's winze in a lode worth 1 ton per fathom. The 50, east of this shaft, contains spots of ore, but not enough to value. Good progress is being made in the 70, west of Judd's. The 50, east of Judd's cross-cut, continues in hard ground. In the 50, west of Sanchez's winze, the lode is regular, and yielding 1 ton of ore per fathom. The sinking of San Victor's engine-shaft has been impeded by the water; a man fixing a cistern and doing other necessary work. The lode in Timeteo's winze, below the 85, has a better appearance, but is valueless. We estimate the raisings for August at 175 tons.

FORTUNA.—August 8: Canada Inocsa: The lode has been intersected in the cross-course in the 120, west of O'Shea's engine-shaft: it contains spots of ore, but not enough to value. The 110, west of Judd's shaft, has fallen off to value in the past few days to ½ ton per fathom. The 30, east of San Carlos shaft, continues very poor. The 40, west of Abercrombie's shaft, is opening tribute ground worth ¾ ton per fathom. The 50, west of the same shaft, yields also ¾ per fathom. The 60, west of San Pedro shaft, is passing through a bar of unproductive ground. The lode in the 70, west of San Pedro, is large, and contains spots of ore. The 70, east of San Pedro, is worth ½ ton of ore per fathom. The lode in the 70, west of O'Shea's, is valueless. The 110, east of Addis's, produces ½ ton of ore per fathom. The lode in the 90, west of Kennedy's, is open and easy for driving, and yields ½ ton per fathom. The 140, west of Lowndes', has declined in value to ½ ton per fathom. In the same level east an improvement has taken place, the lode now producing ¾ ton per fathom. The 90, east of Caro's shaft, is still disordered in the cross-course. The 80, east of San Tomas shaft, contains spots of ore, but not enough to value. San Pedro shaft, below the 70, is off the lode, and in very hard ground. Fernandez winze, below the 60, is hoied to the 70. Fowler's winze will deepened to the 60 in the present week. Rita's winze, below the 100, yields ½ ton of ore per fathom. Laborde's winze, below the 80, has again improved to 1 ton per fathom. Cristino's winze is being sunk below the 90, and in advance of the 100, west of Lowndes' shaft. It is worth 1 ton of ore per fathom.

Los Salidos: The 130, west of Buenos Amigos engine-shaft, is poor. The driving in the same direction, is worth ¼ ton of ore per fathom. In the bottom of the shaft, the ground is unsettled, having just passed through a large course. The lode in the 130, west of Morris's, is split into branches, containing lead ore. The lode in the same level east is very regular, and spotted with ore. The 120, east of Cox's, is opening spendid ground, worth 2 tons per fathom. 110, east of San Pablo's, has fallen off in value to 1 ton per fathom. The 140, of Swaffield's shaft, yields 1 ton per fathom. In the same level east the lode is being been for some time past small and poor is now suspended. The 85, west of Swaffield's shaft, is valueless. In the 65, west of Palgrave's shaft, the lode has become poor within the past few days. The same level east has opened good ground in the past month, but is at present unproductive. Alvarez' winze, in the 120, contains spots of lead ore only. In Gil's winze, below the 25, the position being bad sinking is suspended. The lode in Mimbra's winze, below the 70, is still poor. Saliente's winze, below the 100, has very much fallen off in value. Ramo's winze, belw the 55, yields ¼ ton per fathom: this is not opening according to expectation. The machinery throughout the mine is in good working order. The raisings for August are estimated at 350 tons.

COAL EXPORTED.—This year the value of coals, coke, &c., exported was 4,572,829, against 5,072,997 last year.

CORNISH PUMPING ENGINES.—The number of pumping-engines reported for June is 17. They have consumed 1861 tons of coal, and lifted 14,200,000 tons of water 10 fms. high. The average duty of the whole is, therefore, 51,500,000 lbs., lifted 1 ft. high, by the consumption of 112 lbs. of coal. The following engines have exceeded the average duty:—

Mellanear—76 in.	Millions 65·4
Mellanear—Gundry's 80 in.	60·0
West Wheal Frances—58 in.	54·9
Wheal Unity Wood—70 in.	62·9
West Wheal Seton—Harvey's 85 in.	62·6
West Wheal Seton—Rule's 70 in.	67·9

JOHN PETHERICK.—We regret to announce the death, at Hambiton, Kingston-on-Thames, on Tuesday, of Mr. JOHN PETHERICK, F.G.S., Mining Engineer, whose name has long been well known to the readers of the *Mining Journal*, and whose reports upon mining properties in various parts of the world were invariably so accurate both as to facts recorded and opinions expressed, that the utmost confidence was always placed in them. Mr. Petherick was in his 74th year.

COPPER ORES.

Sampled Aug. 1, and sold at Swansea, Aug. 14.

Mines.	Tons.	Produce.	Price.			Mines.	Tons.	Produce.	Price.		
Betts Cove	140	10¼	£6	6	0	Carracedo	96	12			
ditto	140	10¼	6	5	0	ditto	93	12			
ditto	140	10¼	6	5	0	ditto	20	11			
ditto	140	10¼	6	6	0	ditto	29	7½			
ditto	140	10¾	6	6	0	Cavera	81	7½			
ditto	104	10½	6	4	0	ditto	80	7½			
ditto	104	10½	6	3	0	Cronebane	113	2½			
ditto	84	8½	5	2	0	Burnt Ore	41	2			
ditto	84	8½	5	2	0	Copper Ore	21	5½			
Union Ore	140	5½	3	3	0	ditto	16	2¼			
ditto	84	5½	3	2	0	Tigrony Pre.	19	33			
ditto	84	5½	3	1	0						

TOTAL PRODUCE.

					Tons.		
Betts Cove Ore	936	£5651	0	0	Cronebane Ore	113	£ 107
Union Ore	308	957	12	0	Burnt Ore	41	24
Carracedo	241	1681	6	0	Copper Ore	35	69
Cavera Ore	161	676	4	6	Tigrony Precipt.	19	384

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Names.	Tons.	Amount.
P. Grenfell and Sons	213½	£ 1,417 11 3
Nevill, Druce, and Co.	388	1,927 4 6
Vivian and Sons	462	1,725 4 6
Williams, Foster, and Co.	496½	2,957 18 3
Mason and Elkington	70	220 10 0
Charles Lambert and Co.	154	865 18 0
Sweetland, Tuttle, and Co.	70	437 10 0
Total	1854	£ 9,551 15 6

TOTALS AND AVERAGES.

	21 cwts.	Produce.	Price.	Per unit.	Standard
Whole sale	1854	8 13-16	£ 5 3 0	11s. 8d.	£83 11 9

Copper ores for sale, at Swansea, August 28.—Betts Cove Ore 822—Cape Ore —Union Ore 283—Var Ore 194—Berehaven 180—Aljustrel 162—Cavera Ore Cronebane 92—Emily Ore 27—Copper Reguius 15—Copper Matt 6.—Total, 2

HYDRAULIC GRAVEL ELEVATOR.

The large returns which have been made in certain districts in America from the treatment of auriferous gravels by what is known as hydraulic mining has caused some interest to attach even in this country to processes suggested in connection with it. It is stated that in almost every gravel mining country there are extensive beds of auriferous earth, sand, and gravel, which have not heretofore been made available, simply because no efficient system and appa-ratus have been devised for working them economically. In many instances the upper stratum of earth has been worked off at a fair profit by existing methods and devices, but the expense of handling, removing, and washing the material at a greater depth became so great that the mines were abandoned, in the face of the well-known fact that the richest deposits of gold lie in the strata nearest the bedrock. Many rich and extensive paying deposits lie in creeks, ravines, and flats too low to be worked by bedrock tunnels, cuts, or drains at any cost, and the only method by which they have been heretofore worked has been by the shovel, wheelbarrow, whim, or derrick. This process being very slow and expensive, requiring in many instances pumps, engines, and other machinery to free the mines from water while being worked; rivers have been wing-dammed, turned, and flumed, and the remaining seepage water pumped out, while the gravel has been removed by the old methods of the wheelbarrow and shovel.

That so inventive a nation as the Americans should have been un-able to discover and more economise means of lifting gravel from great depths than the shovel, wheelbarrow, whim, or derrick really appears marvellous, and can only be accounted for on the supposi-tion that hitherto it has only been requisite to lift the gravel a few feet, and that hitherto it has only been requisite to lift the gravel a few feet, since for small depths the appliances just mentioned are be-yond the shadow of a doubt the most economic. With a steam whim and a few stalwart Cornishmen auriferous gravel containing but a few shillings worth of gold to the ton would not be permitted to remain 10 fathoms below the surface, yet it seems that hitherto the Americans have been quite incompetent to deal with such a difficulty, much so that Mr. George W. Cranston, of San Francisco, has invented a peculiar invention for raising the gravel by washing it up through a pipe, and the machine is said to be successfully working on the American Flat claim, at Fiddletown, in Amador county, and several other places. It is explained that it is not proposed with steam pump up rivers, yet after the surface water has been turned off, and the machine is proposed to dispense with shovels, wheel-barrows, and pumps, and work such mines as easy as those which have outlets for sluicing through, and that it is a well-known fact that every hydraulic miner that water and gravel can be driven readily by hydraulic force, and that it is only necessary to give water a greater velocity in a flume to make it carry more gravel. Miners accomplish this give their flumes more grade. Now, the inventor claims to have discovered that it is only necessary to give water a little more velocity than it travels in an ordinary flume in order to readily carry gravel up hill. To accomplish this, and impart the required velocity to the water and gravel, a closed flume is con-structed on an inclination upward, with a horizontal ground section made of cast-iron, and a hydraulic nozzle introduced into a chamber in the ground section of the machine, and the nozzle pointed in the direction it is desired to make the water go. This ground section has an open end, back or behind the nozzle. There the water and gravel enter the machine.

The open end is connected with the flume placed in the bottom of the mine, and the gravel is washed or driven into this flume in the ordinary way of mining. Between this flume and the open throat of the machine is placed a grizzly or grating that rejects off to one side any large boulders too large to pass through the throat of the machine. At the opposite end of this ground section they connect the upward inclined closed flume, and also connect it at its upward end with the flume at the top of the mine, so as to discharge the material and water elevated into this flume at the top. In order to operate this machine the water is turned under pressure into the hydraulic pipe connected with the nozzle, which discharges inside the chamber of the ground section of the machine. They then turn the water on the two monitors that drives the gravel into the flume in the bottom of the mine.

It will be evident from the above description that if there is suf-ficient force exerted by the water discharged from the hydraulic nozzle of the machine to drive and lift the material coming through the flume and into the throat of the machine, and carry it through the upward inclined spout, and discharge it into the flume on top, the earth, sand, gravel, and rocks entering the machine must ne-cessarily be carried along and discharged with the water into the flume on top. The water, gravel, and material are thus made to travel through the machine at high speed by the direct action of the hy-draulic force exerted by the nozzle of the machine. All of the water and material comes in direct contact with the stream of water discharged from this nozzle, consequently it serves greatly to disintegrate and pulverise all gravel that is hard and difficult to wash. The gravel must pass through the machine at a high rate of speed, which is absolutely necessary to make it work. The gravel never stops or lodges when the machine is working under pressure. Gravel and water have been run through this machine by actual test about as fast as the water will carry the gravel through a flume on 24-in. grade, and it was impossible to choke the machine by any head of water it was calculated to carry.

The water discharged by the hydraulic nozzle elevator operates to thin the material and water when it enters, and to drive it at the same time up through the elevator spout. This disintegra-ting and washing process above alluded to, produced by the hy-draulic force of the nozze of the machine, so thoroughly washes and cleans the gravel in its upward passage through the elevator that the inventors claim that expensive long flumes for wash-ing are not necessary, the gravel being washed better in a single passage through this machine than in travelling one-half mile through an ordinary flume. The process of employing under-current is considered by the San Francisco Mining and Scientific Press, in which the invention is described and illustrated, to be new, and to possess several advantages. They are placed a short distance from the flume from where the elevator spout discharges, drawing the heavier materials, gold, sand, and quicksilver, from the flume before it has time to settle from the agitation produced by the discharge of the material by the elevator spout, and is conducted away from this place in a side sluice and enters into the box where the material enters the elevator. The quicksilver is thus made to mix with the gravel, &c., up through the elevator spout, driven through by the hydraulic nozzle of the machine, thus mixing, agi-tating, and intermingling with the gold and other materials as it is passing through the machine in an endless returning current. This under-current is placed so near the head of the flume that it saves most of the gold, and can be cleaned up every day if desired, with-out stopping the machine or waiting for a long run before cleaning up. In order to recover the elevating or driving water, which is dis-charged by the nozzle of the machine, and utilise it for washing the gravel in the mine into the machine, they construct a settling tank on one side of the flume on the top of the mine, just far enough from the flume from where the spout discharges to allow the sur-plus water to become settled a little. They cut away the side of the flume next to the settling tank, and place bars lengthwise, at short intervals apart, across the opening made in the flume. The muddy water of the flume, containing but little gravel, flows over into the settling tank. The bars prevent the gravel and boulders from flowing over with the water, and keep them in the main flume.

Several problems which naturally suggest themselves to the practical miner are—How does it happen if the deposits lie in deposits too low to be worked by bedrock tunnels, cuts or drains at any cost that the water flowing through the nozzles to disintegrate the bank, as well as that returning from the elevator, does not accumulate in the mine? If there be an outlet for the mine water, is it not more economic to carry the gravel through the same outlet, and save the cost of elevating altogether? And, if there be no outlet, is it not more economic to lift the gravel by a steam or horse whim than to pump the large quantity of extra water which would in that case have to be pumped? These are at least questions which would have to be settled by those engaged in working an unfavourably situated deposit.

The settling tank used in connection with the elevator has two compartments. The surface water from the compartment next to the flume, after it has settled, flows over into an outer compartment, where it is led back by pipes or otherwise into the mine to wash the gravel into the machine. This tank is provided also with sliding gates next to the flume, to regulate the amount of water drawn from the main flume, so that no more water is allowed to run in the flume than is necessary to carry the gravel through to the dump. The compartment of the tank next to the flume, where the gravel settles, has a gate at the bottom to draw off the gravel collected in the tank, and has a small spout or flume to convey it off down where it can be discharged into the main flume again. This gate can be closed and the gravel drawn off when the box gets full, or can be left partially open, so that the gravel is drawn off as fast as collected.

It will be evident that the greatest amount of wear will be on the ground section and curves, so these parts are made in sections so as to be easily repaired. The machine is made so as to be worked with an irregular head of water. This machine is simple of con-struction, having neither belts, wheels, pulleys, valves, nor buckets —nothing to get out of repair, and nothing complicated. It can, it is claimed, be run by anyone, and is really a great improvement. It sluices water and gravel uphill, works mines that have no dump, saves bedrock tunnels, open cuts, and drains; works as good as a flume of 10 or 12-in. grade, and will handle as much gravel in pro-portion to the water used. It can be made of any capacity. Where-ever hydraulic pressure can be had—say, 100, 200, or 300 ft.—a mine can be worked to as good advantage 20 to 50 ft. deep as through an open cut or tunnel.

BLEACHING CHINA CLAYS.

In order to remove the organic or colouring matter which china clays contain in their natural state at a certain stage in the process of their preparation or manufacture, and whilst the clays are in a liquid or running state, Mr. John Carr, of Cardiff, proposes to treat them by adding to them a composition composed of chlorine gas, by parts, 100; hydrochloric acid, by parts, 100 to 200 parts; water and clay combined, 100 parts; sulphurous acid gas and water to 300 parts, water and clay combined; sulphuric acid, 100 parts to 400 parts, water and clay combined; hyposulphite of soda, bisul-phite of soda, and hypochlorite of soda, these are all used in com-bination with the before-mentioned chemicals according as the va-rious qualities of clay require; oxalic acid, by parts, 100; to water and clay combined, 150 parts. The action of all these chemicals on the clay is to effect the process of bleaching without breaking up the component parts of the china clay. The bleaching action com-mences within 60 minutes after application, but the longer the acid is allowed to remain in the clay tank mixed with the clay the more effectual and economical is the process, as china clays vary very much as to the quantity of organic matter originally contained in them. Another advantage of this process is, that when acids are used without the gas the solution may be worked over again by conveying it back over the clay stopes, thereby reducing the ori-ginal quantity required for the purpose of bleaching. When, by means of the action of the chemical before mentioned, the process of bleaching has been completed the clay is then dried in a kiln as usual. The improved apparatus for producing the sulphurous acid gas required in this invention consists of an erection constructed of fire-bricks and clay, measuring about 6 ft. in length, 6 ft. in height, and 3 ft. in width, divided into three compartments or chambers, and numbered 1, 2, 3, respectively.

The dimensions of the several chambers vary. Usually, compart-ment No. 1 is about 2 ft. high, 1 ft. 6 in. wide, has a semi-arched roof; in this arched roof he places sulphur and sulphuric acid, which are ignited and kept constantly burning either by means of air sup-plied through a suction pipe inserted within 9 in. of the top of the chamber No. 3, or by a fire lighted underneath the slab on which are placed the sulphur and sulphuric acid above named; this chamber is also provided with an aperture through which the gas escapes and passes into chambers 2 and 3. Chamber No. 2 is about 3 ft. by 1 ft. 2 in., is filled with clean gas coke, and at its extreme end there is fixed a 4-in. earthen pipe, about 1 ft. long, to which is attached a leaden pipe of corresponding diameter, and sufficiently long to convey the gas water to the clay as it runs through glazed earthen pipes, or covered launders, from the micus to the settling pits. Chamber No. 3 is about 5 ft. high, 1 ft. 2 in. square, having a small aperture at the top, in which is placed a pipe of $\frac{3}{8}$-inch bore. This pipe conveys a constant stream of water into this chamber, which is also filled with clean gas coke like unto chamber 2, the water passing down through the before-mentioned coke becomes impreg-nated with the generated sulphurous gas passing out through the pipe inserted at the end of chamber 2. Within 9 in. of the top is a suction pipe, 3 in. in diameter, referred to in the description of chamber 1, and is carried out to the nearest stream of water to keep up the ignition of chamber 1, and thus dispense with the use of a fire; but the apparatus is provided with a suitable fire-place and ash-pit for use when no stream of water is near at hand for feeding this suction pipe.

IMPROVEMENTS IN STEAM PUMPS.

Upon the piston-rod or pump-rod, and moving with it, Mr. H. G. Harris, of Westminster, proposes to place a fixed arm or bracket. The outer end of this bracket is bored to fit the steam valve rod on which it slides, and is fitted with a pivotting key to work in spiral grooves cut in the steam valve rod. The steam valve rod has no endway movement, but can revolve freely in its bearings, and has made in it two spiral grooves, each consisting of a half turn of a thread of twice the pitch of the stroke of the engine, one groove having its pitch in one and the other groove in the opposite direction. Then the pivotting key passing from end to end of these grooves by the motion of the piston-rod will cause this rod to revolve continu-ously in one direction. In the one arrangement the steam-valve, which is cylindrical, is upon the end of the rod (inside the valve casing) and revolves with it. This valve is cast with its ends open and with two steam and two exhaust ports so arranged that a steam and an exhaust port are opposite each other, but are separated by a diaphragm cast with the valve in such a manner as to form two chambers, one of which contains both the steam and the other both the exhaust ports. A steam-tight joint between the steam and the exhaust is made at one end of the valve (and by the valve itself) against a corresponding face on the valve casing.

Steam is admitted to the end of the valve, and the exhaust passes from the opposite end. Surrounding this valve is a cylin-drical bush forming the expansion valve, and having steam ports in it with one end inclined; this bush can be moved endwise by means of a lever or hand-wheel and screw, so that the width of the steam port in this bush over that leading to the cylinder is varied by the movement of the lever or hand-wheel and screw, thereby causing the steam-valve to cut off the steam from the cylinder earlier or later in accordance with the position of this expansion valve, the excess of length of the exhaust ports in the steam-valve (over the steam ports) enabling the exhaust to take place through the whole of the return stroke, no matter where the cut-off of steam may occur. In another arrangement there are upon the (revolving) valve rod, and in the valve casing, two or more eccentrics which work respec-tively an ordinary slide valve and expansion valves (these valves, however, working at right angles to the stroke of the piston), and the expansion is varied in the ordinary way by right and left-handed screws upon the expansion valve's rod and nuts to correspond in the valves.

In some convenient position, preferably cast upon the valve chest, there is secured a small cylinder in which works an air-tight piston. This piston has secured in it and working with it a rod, which rod is attached to the lever which is upon the spindle of the expansion valve. One end of the small cylinder—that is, one side of the air-tight piston—is in connection with the air vessel or discharge pipe of the pump; upon the other side of this air-tight piston, and between it and a fixed bracket, there is an adjustable spring, then the pressure in the air vessel or discharge pipe of the pump acting on one side of the air-tight piston and against the adjustable spring will cause that piston to assume various positions in its cylinder in accordance with that pressure, and then this air-tight piston being in connection with the expansion valve will cause that expansion valve to vary its position, and, therefore, to vary the cut-off of the steam. In another arrangement there are two small cylinders, each being fitted with an air-tight piston and rod. These rods are in direct attachment with throttle valves placed in the steam pipe near to the cylinder; one side of each of these air-tight pistons is in connection with the air, and in the case of the one small cylinder the other side of its piston is in connection with the suction of the pump, so that when the pump is at work there will be in this small cylinder an air pressure upon one side of the piston, and a partial vacuum on the other. In the case of the other small cylinder the opposite side of its piston to that which is in connection with the air is connected with the air vessel or discharge pipe of the pump, so that when the pump is at work there will be in this small cylinder an air pressure on one side of the piston, and a pressure upon the other side of the piston equal to the air pressure, plus the weight of the head against which the pump is working.

When the pump is first started only a small amount of steam can pass the throttle valves (which are actuated by the air-tight pistons) into the steam cylinder, and the pump starts but slowly; as the pump works, however, a vacuum is formed in the suction pipe of the pump, and the air pressure acting upon the one side of the air-tight piston causes it to move in its cylinder and to open the valve to its full area. In the case of the other small cylinder, one end of which is in connection with the air vessel or delivery pipe of the pump, in proportion as the head of water against which the pump is working is more or less, so does this piston occupy different posi-tions in its cylinder, thereby causing the throttle-valve to admit more or less steam to the steam cylinder, the least steam being ad-mitted when the pressure of water is least. In this arrangement either or both cylinders and their throttle-valves may be used to govern the pump.

FOREIGN MINING AND METALLURGY.

Comparatively few orders have been received by the French iron trade during the last few days, and there has been in consequence no increase of activity at the works. In the Haute Marne mer-chants' iron is the most in favour, but plates and other articles are in little demand. In the Meurthe-et-Moselle pig has rather expe-rienced a check; business has been done at 2*l.* 9s. 6d. to 2*l.* 10s. 4d. per ton. Old rails, which are daily worked up into iron of com-merce, cause pig to be in considerable disfavour—in fact, it is neg-lected. The steelworks of the East and Centre of France have all work on hand; this remark especially applies to rails and tyres. The question of the renewal of treaties of commerce continues to occupy a large amount of attention. The principal industrials of the Loire and southern districts recently profited from a journey made by M. de Meaux to St. Etienne to present to him some observa-tions upon the subject. The Minister of Commerce, whose tenden-cies are rather in the direction of free trade, contented himself with assuring a deputation which waited upon him that he would make every effort for the protection of such a considerable industry, but that he could give no positive assurance as to the final result of any negociations which might be undertaken. A railway station, in-tended to accommodate the Paris Exhibition of 1878, was originally intended to have been built of wood; it is, however, to be con-structed of iron, and the work of construction has been entrusted to M. Baudet, of Paris.

There cannot be said to be much, if any, improvement at present in the French coal trade. The basins of the Nord, the Pas-de-Calais, and the Loire have extracted little, forwarded little, and sold little. The iron trade is still only consuming upon a small scale, and, of course, this circumstance has a great effect. No improvement in affairs is now anticipated until the winter sets in.

Contracts have just been let at Brussels for 300 coal trucks of 10 tons each. MM. Delforge and Co., of Seneffe, offered to supply 50 of these trucks at 79*l.* 16s. each. MM. Nicaise and Delcave, of La Louviere, required 86*l.* per truck. The Belgian Company for the Construction of Engines and Railway Plant required 86*l.* per truck for one lot, and 86*l.* 12s. per truck for another lot. The Belgian Metallurgical and Colliery Company, the Dyle Workshops Company, M. Cabany, of Molines, &c., also tendered at about the same rates. At Antwerp a contract has been let for two lots of 653 tons each of Vignoles iron rails, with fish-plates, but without bolts, at 5*l.* 9s. per ton. The contract was obtained by the Monceau-sur-Sambre Com-pany. The Thy-le-Chateau Company required 5*l.* 11s. 3d. per ton for a similar delivery, and the Acoz Forges Company 5*l.* 16s. per ton. The Association of Engineers Educated at the Liége School has just held its annual general meeting at Mons, and some interesting in-dustrial excursions were made upon the occasion. Some sinking works of the Ghlin Company, which is sinking by the Kind-Chaudron process two pits, which have to attain a depth of 1000 ft., were in-spected. A visit was also paid to the Levant du Flénu Colliery, where an exhibition of perforators of various kinds had been or-ganised. From the Levant du Flénu Colliery a special train con-veyed the excursionists to Crach et Picquery, where some Guibal and Lamielle ventilators and some apparatus for washing coal and producing coke were especially remarked. The Produits Colliery was visited last, and here a special coke manufactory was examined. The gases proceeding from the distillation of the coal are collected, and the sub-products utilisable in industry are separated; the re-mainder heats the furnaces in which the coke is made. The ventil-lating apparatus installed in a central building is powerful and remarkable, and the various centres of extraction admit of a con-siderable production and economical deliveries. The collieries of the Marcinelle and Couillet Company were worked at a good profit in the year ending March 31, 1877. The blast-furnaces and rolling mills were, however, worked at a loss during the year. The ulti-mate rough profit derived from the operations of the year was 36,273*l.*, but after providing for the service of the company's loans, general expenses, and sundry redemptions, there was no balance available for dividend upon the shares, although the directors were enabled to carry forward 406*l.*

Contracts are about to be let at Brussels for 202,800 tons of coal, intended for the service of the Belgian State Railways as from Oct. 16, 1877. It would, perhaps, be too much to affirm that the prices which are likely to be witnessed at the adjudication will be higher than those of the last previous contracts, but such a circumstance would not be at all astonishing, as the period of the delivery coincides pre-cisely with the commencement of the winter session. In any case the Belgian Minister of Public Works is probably acting judiciously in securing without further delay the coal which he requires. In-dustrials would probably do well for the same reason to let con-tracts, but the requirements of industry are inconsiderable, and pur-chasers appear to prefer to buy simply from day to day: upon the whole, the deliveries from the various basins must be said to be un-important. Business is generally quiet, as well at Liége as at Char-leroi and in the Centre; the present is not encouraging, all that coal-owners can do is to hope on as regards the future.

Operating the Valves of Air-Compressors.—The invention of Mr. J. Shaw, of Ovenden, near Halifax, relates to apparatus to be used for opening and closing the valves of air-compressors, and consists—firstly, in operating such valves by means of a hydraulic apparatus, comprising an ordinary cylinder and piston, the cylinder being attached to the piston-rod or other moving part of the com-pressor, and the hydraulic piston-rod being connected to a cross-head to which the valve spindles of the compressor are attached; secondly, instead of the appliances described he may use a steam cylinder and piston, arranged so as to act either in conjunction with or independently of the moving parts of the compressor; thirdly, he may operate such valves by means of one or more eccentrics suitably arranged, and worked from any convenient source. By these methods the operation of the valves is effected in a more posi-tive manner than by the action of atmospheric pressure or friction, which have hitherto been relied on for the purpose.

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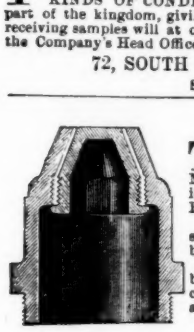

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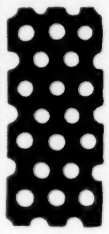

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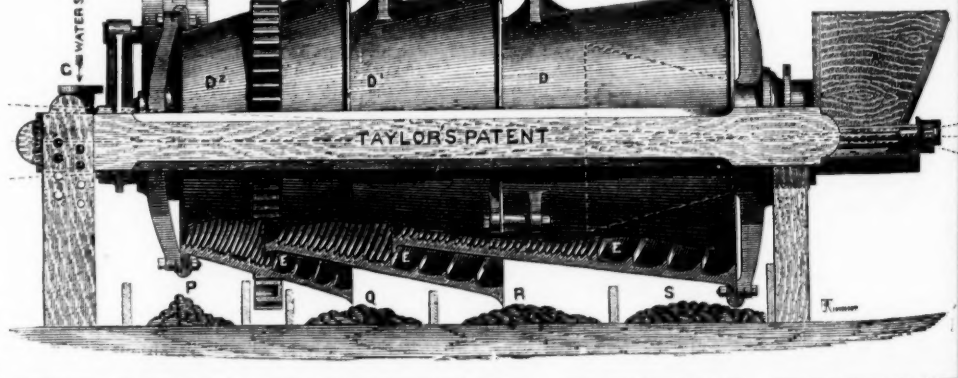

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FOR SEPARATING AND SIZING MINERAL AND OTHER SUBSTANCES.

By the aid of this invention any materials, which are of different specific gravity, can be concentrated and sorted mechanically, while in the case of ores the fine mineral is brought up with the larger particles instead of being washed into the waste—a most important feature.

This machine uses very little water in proportion to the quantity of material treated, and will be found a most useful and efficient dressing apparatus.

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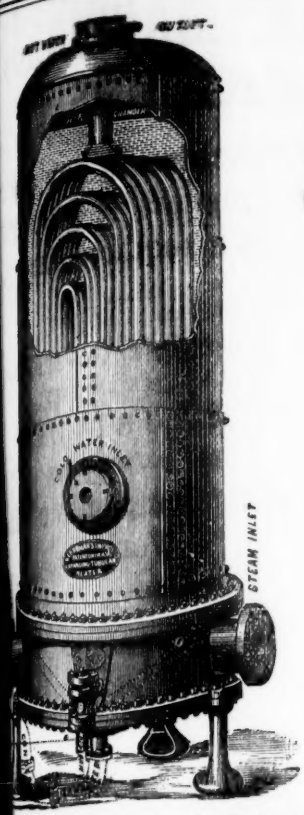
MACHINERY FOR MIXING CONCRETE.—For the more e… and expeditious mixing of concrete by mechanical means o… in a continuous manner, thereby dispensing to a great exte… manual labour, an improved machine has been invented by … GARVIE and BISSETT, of Aberdeen, which consists essentia… hollow revolving mixing cylinder disposed either horizontal… any convenient inclination, and driven by the aid of gea… otherwise from a steam-engine or other prime mover. The … cylinder is provided in the interior with curved, spiral, or s… bars, or with an archimedean screw so disposed that w… cylinder revolves the concrete, which is continuously fed in… end from a feeding hopper, shall become thoroughly mixed… passage through the said cylinder, and be continuously dis… into a delivery hopper at the delivering end of the same. The … ing hopper is, when requisite, constructed on a raised platfo… proached by an incline for the facility of wheeling up the ma… which are tipped directly into the said hopper. A pipe and … cock are provided near the feeding hopper in order to direct… quisite quantity of water into and amongst the said material… passing into the mixing cylinder. The discharging mouth… delivery hopper is furnished with a door or doors control… lever and chain for the purpose of regulating or stopping t… very as required into the receiving barrows below. If de… ixed cylinder may be employed in any convenient position, … an internal revolving frame working therein for stirring or … the concrete and discharging the same in a continuous man…



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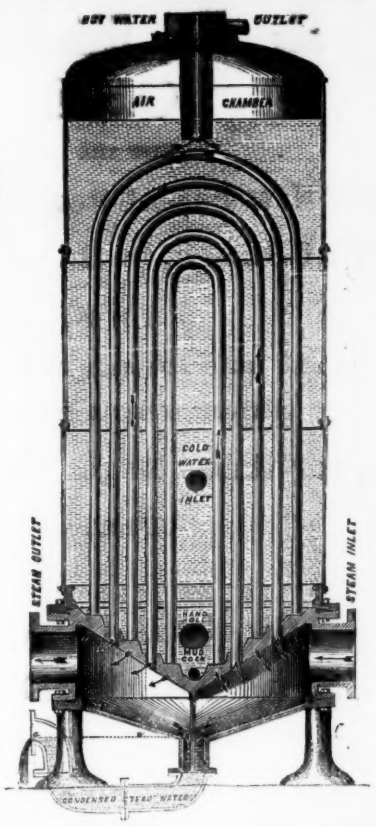

having purchased the Engineering Business lately carried on by R. BERRYMAN AND CO., at 23, Congreve-street, Birmingham, and 28, Wilson-street, Finsbury-square, London, have removed the whole to their Works at TIPTON, to which place ALL COMMUNICATIONS SHOULD IN FUTURE BE ADDRESSED, and where the BERRYMAN HEATER can be seen at work, and in every stage of manufacture.

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ALL THE TUBES ARE OF SPECIALLY PREPARED SOLID DRAWN BRASS AND COPPER; both ends are expanded into the bored holes of the same Tube Plate, METAL to METAL, and every tube is free to expand and contract independent of each other. Leakage is impossible, as, when the tubes are once fixed, nothing short of cutting out will remove them. No scurf adheres to the tubes because of the difference of expansion between SCURF and BRASS. The inside of the Heater can be washed out by means of the mud cock and hand hole whilst at work.

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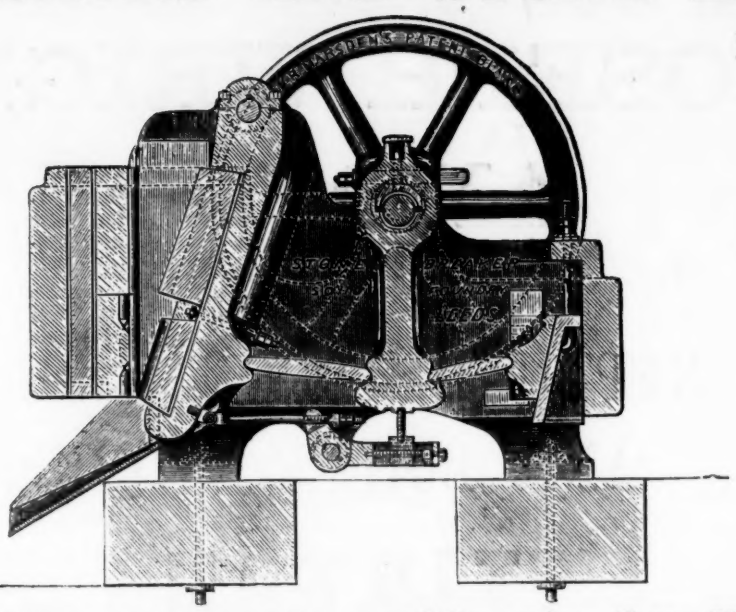

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